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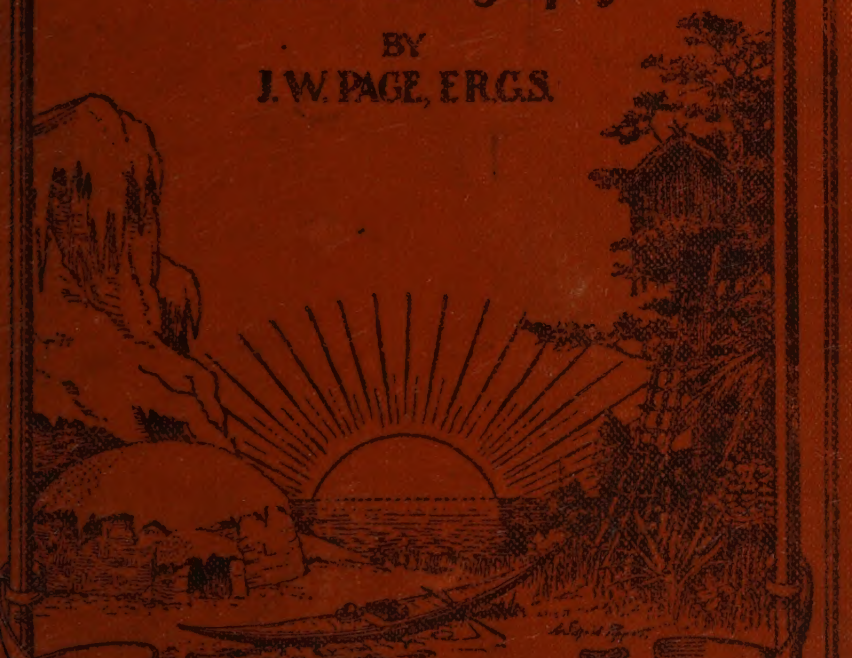
MAN AND THE EARTH

A Simple Reader in Human Geography

BY

J. W. PAGE, F.R.G.S.



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MAN & THE EARTH

A SIMPLE READER IN HUMAN GEOGRAPHY

BY

J. W. PAGE

FELLOW OF THE ROYAL GEOGRAPHICAL SOCIETY
FELLOW OF THE ROYAL ANTHROPOLOGICAL INSTITUTE

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PREFACE

I AM deeply indebted to the following for the loan of the valuable photographs with which this book is illustrated: The Right Rev. the Lord Bishop of Glasgow, Dr. A. C. Haddon, F.R.S., Capt. C. G. Rawling, C.I.E., Dr. Eric Marshall, T. J. Alldridge, Esq., I.S.O., M. Sommier, Douglas Carruthers, Esq., F.R.G.S., J. Harding King, Esq., F.R.G.S., Rev. W. Vivian, F.R.G.S., R. Renwick, Esq., F.R.G.S., J. A. G. Reeve, Esq., A. J. Cole, Esq., Messrs. Maclaren and Co., the China Inland Mission, the Soudan United Missions, the Moravian Mission, the Melanesian Mission, the Great Eastern Railway, and the Governments of Canada, Queensland, and Victoria.

J. W. PAGE

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CHAPTER I

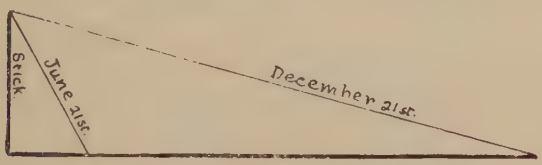
INTRODUCTION

You all know that in England it is warmer in summer than in winter. Perhaps you have also noticed that the shadow cast by a stick at noon, when the sun is shining, is not always the same length.

On mid-summer day the shadow is the shortest, while the shadow cast by the same stick on mid-winter's day is the longest.

If you draw a line the same length as the stick, and another at right-angles to it the same length as the shadow, and then join the ends, you will have a line which shows the direction the rays of light and heat take in coming from the sun to the earth.

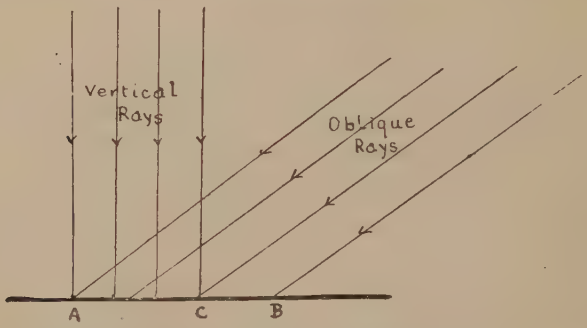
Now look at this diagram, and you will see



that the rays are very slanting in winter, but almost vertical in summer.

When you want to get very warm you stand straight in front of the fire. The drawing on the next page will show you the reason for this.

The four vertical rays heat the portion AC, while the four oblique rays have to heat the



larger portion AB. Thus AC will be warmer than AB. So you see vertical rays are the warmer. In England the sun is never overhead, so we never have vertical rays.

At places near the Equator, however, the sun is overhead at least twice a year, and is never far from that position.

The vertical rays will make these parts of the earth very hot indeed, hotter even than it is in our islands in summer. The air also will be very hot. To-night, when you get home, if you try to find the warmest air in your room, you will find it near the ceiling.

This is because warm air is lighter than cold air. The cold air has pushed the warm air up, just as, when you hold a cork under water, and let it go, it is pushed to the surface, because it is lighter than water.

Thus at the Equator air is always rising, and, as it is very hot, some water will be changed into vapour, and rise with the air.

As this air ascends, it slowly cools, and the vapour that it carries with it is also cooled, and forms tiny drops of water. These little drops run together, making larger drops, and, since they are heavier than air, they come down as rain.

So you see that the equatorial regions of the earth are not only hot, but very wet. In fact, it rains almost every day in some parts; and the air is so damp that if a rifle were left out all night it would be covered with rust in the morning.

Look at the map of the world, or, better still, a globe, and you will see that the Equator cuts South America towards the north, divides Africa almost in two, and runs through a number of islands lying to the south of Asia.

One of the largest of these islands is called Borneo. Some of the natives of this island are so used to rain that they say it is a dry day when it rains only a little.

If you want to make a plant grow quickly, you place it in a hot-house and water it.

In the parts of the world near the Equator there is plenty of heat and rain, so there is also a great quantity of plant life.

CHAPTER II

THE TROPICAL FOREST

THE lowland districts in the equatorial regions of the earth are clothed with a beautiful growth of plants.

Large areas are covered with trees, which have trunks one to five feet across, and rise to two hundred feet or more.

This great height is brought about by the struggle between the trees to obtain sunlight.

Many of these huge trees rise branchless for a hundred feet upwards from the soil. These are generally hardwood trees, which get their support from their deep roots.

Others, whose roots strike less deeply, or require more support, have buttresses, or natural "struts," that taper upward from the soil, till they merge into the mighty bole, at a height of some twelve yards or more from the tree-foot.

Climbing up these huge trees, and connecting one tree with another, are mighty creeping plants. Some of these have a stem as thick as a man's thigh. They look almost like huge cables.

The undergrowth is so thick and dense that it looks easier to walk on top of it than to cut one's way through.

In the forest there are a great number of beautiful ferns, and palms of many kinds. Besides these, mosses, lichens, fungi, and plants

that live on other plants, all help to make up the mass of vegetation.

Even on the leaves of the trees other small plants grow, and in the forks of the branches are

A BRIDGE IN THE HOT WET DISTRICT OF COLOMBIA; THATCHED TO KEEP THE WOOD DRY

flowers, including orchids, some of which could be sold for a large sum of money in England.

The trees are packed so close together that

in the forest it is dark. The sun's light can scarcely pass through the wealth of vegetation. It is also very still in the forest. This stillness is most marked in the morning, when the only sound is the crackling of the sticks as one moves along.

The beauties of the forest are not seen in walking through it. The flowers, birds, and fruits are generally to be found on the topmost branches, or on the banks of a stream. There also the butterflies and highly coloured birds flit about.

Many of the trees and plants are useful to man. India-rubber and camphor are obtained from some trees, others yield timber, and from others the natives obtain poisons. In fact, some of the peoples that live in these forests have a use for almost every tree.

So dense is the vegetation that everything else is crowded out. The only large animals to be found in these forests are those that live in trees, that is, apes and monkeys.

The forests of the Amazon, which are called selvas, are crowded with monkeys. The gorilla and chimpanzee live in the forests of Africa, and another large ape, the orang-outan, lives in the forests of Borneo and Sumatra.

Man himself appears to be crushed out, for the number of people in the tropical forests is very small.

How is man to get his living there? The

labour necessary to clear a piece of land to grow crops is very great. Besides, if crops are grown, weeds and forest plants quickly spring up and choke them.

The air is so hot and damp that it makes man

PILE-DWELLINGS OF NEW GUINEA

[By permission of Dr. A. C. Haddon, F.R.S.]

feel lazy, as you do on a warm wet day. Happily, Nature is kind and provides all the native needs.

Thus agriculture is not generally carried on in these districts. The natives hunt the few wild animals to be found there, and collect whatever fruits and roots are useful to them.

The great rain fall in the tropical parts of the earth causes the rivers at times to flood the land, and much of the country is marshy.

Where the people, as in South-east Asia, build their houses near the shore or river, they

TREE-DWELLINGS

must have their floor some distance from the ground.

First of all, huge piles are driven into the soft mud. Cross pieces are tied to these, and the hut is built on them. The planks of the floor are never quite close together. A rough ladder leads from the ground to the floor.

This kind of dwelling is called a pile-dwelling.

Sometimes they are built on dry land, then poultry and pigs are kept underneath.

In the Malay Peninsula and in some parts of the large island of New Guinea the natives for safety build houses in a tree.

Sometimes they are as much as sixty or seventy feet above the ground. A rude ladder connects the house with the ground.

You might wonder why these houses are safe, since all that has to be done is to cut down the tree to get at the people.

This, however, is no easy matter when only a stone axe is used, and all the while that an attempt is being made to fell the tree stones and poisoned arrows can be thrown down from the hut.

CHAPTER III

THE PYGMIES—PART I

The greater number of the people who live in the forests near the Equator are short of stature.

In the depths of the forests of the Congo in Africa a race of dwarfs is found. Even full-grown men are rarely more than 4 ft. 9 in. in height. That is not much taller than some of you. These little people are called pygmies.

They were driven into the forests by the stronger black peoples that lived on the edges of the forest.

Equally short peoples, or pygmies, have been found in the interior of other tropical forests, in the Andaman Islands, in parts of the Malay Peninsula, Sumatra, the Philippines and New Guinea. But the Indians who live in the forests of the Amazon, though they are short, are not pygmies.

The dwarfs of the Congo Forest have short woolly hair, which is usually of a dark colour. In many cases their bodies are also covered with hair, but this hair is light and downy.

Their skin, as a rule, is of a reddish or yellowish-brown colour, but sometimes it is very dark. They have very large heads, which appear even larger than they are on account of their thin bodies and limbs, and their small hands and feet.

As the dwarfs obtain their food by hunting, they watch very carefully the habits of animals. The dwarfs know also what fruits they may eat without causing themselves harm. In fact, they have an excellent knowledge of Nature.

They hunt their game with a bow and poisoned arrows; the arrows are carried in a small case, called a quiver. They drive the smaller game, such as birds, into nets.

The pygmies vary their diet by having fish and honey. Anxiety to obtain honey has made them expert climbers. No matter how high the wild

bees have built their nests, the pygmies are soon up after them.

All the iron work that they use is obtained

PYGMIES AND PLAINSMEN OF NEW GUINEA

[*By permission of Captain C. G. Rawling, C.I.E., and Dr. Eric Marshall*]

from other tribes. In exchange for the iron they give meat, honey, creepers, which will be used as ropes, and leaves for thatching huts.

Sometimes, when the pygmies require bananas, they go to the plantation of a friendly negro tribe and help themselves. They then fasten to the tree as much flesh as they think the bananas are worth. This kind of buying and selling, where not a word is spoken, is called "silent trade."

They have no industry of their own, except the making of their own arrow-poison, though in some parts they have copied the handicrafts of their big Negro neighbours.

The pygmies usually wear no clothes, but before strangers they wear a piece of skin or bark-cloth, or a screen of foliage.

CHAPTER IV

THE PYGMIES—PART II

These little people live in small groups which seldom contain more than a few families. Each of these small villages is under the control of an elder, who is chosen because he has proved himself to be a clever hunter or fighter. They have, however, no real chiefs, and each group often goes to war with a neighbouring group.

The forest is free to all; and they wander through it in search of game.

They have no settled home; but pitch their curious round shelters, which are only three feet high, even in the centre, in a clearing in the forest.

The huts are made by planting the thick ends of long branches in the ground, and then bending them over until the upper ends are almost rooted in the soil. This makes a flattened semi-circle.

A thatch of reeds and leaves is put on top, and thus a poor shelter from tropical rains is made.

A small hole is left uncovered near the bottom to enable the pygmy to reach the interior on all fours. Even inside, he cannot stand erect.

When the dwarfs go hunting they move their huts from place to place. They also move them when one of the village dies, or when they have killed a large animal. It is easier, you see, to move the huts to the animal than the animal to the huts.

The pygmies are markedly intelligent, but extremely shy and timid; they are very musical and are fond of dancing. Their dances often last for several hours, and are carried on with great energy and spirit.

The little people that live in tropical forests all use the bow and arrow for hunting, but some in S.E. Asia have borrowed another weapon from their big neighbours. This is the blow-gun or blow-tube. It is often made from a piece of bamboo about six to eight feet long. A mouthpiece is then fitted to it.

A small dart is made from the mid-rib of a palm-leaf, and a feather, a tuft of cotton, or a

piece of down, is fastened at one end to keep it fitted closely in the tube and make it fly straight. The other end is sharpened and poisoned, so that a slight scratch proves fatal.

The hunter carries the darts in a quiver made of bamboo, which he straps to his side. When he sees a bird or other game, he kneels on one knee, places a dart in his blow-pipe, puts the tube to his mouth, takes aim, and then with one blast of air the little dart is forced out.

Of course he cannot send a dart from the blow-pipe as far as he can shoot an arrow. But as there is plenty of cover in the forest the little hunter hides in the undergrowth, dodges behind the trees, and so creeps up quite close to his prey, and shoots at short range. Both the blow-gun and the bow and arrow have this advantage over fire-arms, that they are noiseless, and so do not scare the game away. They are therefore often still used for hunting after they have been given up as weapons of war.

CHAPTER V

AGRICULTURE IN HOT REGIONS

THE pygmies do no planting whatever, but the natives in other hot and wet countries grow a few plants. This work is almost always done by the women while the men are away hunting.

No doubt these women found it was not such hard work to grow plants close to the hut as to wander through the forest in search of roots and fruit.

When plants are grown in these parts of the earth, the return for the work spent on them is very great. Thus three bread-fruit trees provide enough food for one man for a year.

The sago-palm grows wild in Borneo and New Guinea. The trees are cut down, the logs are then peeled, and the pith is rasped on a long spiked board. The powder is then removed to a mat on a platform which overhangs a river, and a native treads on it, pouring water over it at the same time.

The dancing of the man separates the fibres, and a thick milky liquid pours into an old canoe placed alongside the platform to receive the liquid.

As the water dribbles away into the river a paste is deposited in the canoe. This crude sago is sold to a Chinese factory, where it is washed and strained, dried in the sun, and then packed to Europe and sold in the grocers' shops.

Because of Nature's great kindness, the natives continue to do their planting in a very simple way.

It was only in countries where man had little provided for him, and was forced to do planting for his living, that agriculture developed.

In the great Pacific Ocean are a vast number of islands. There are very few wild animals in some of these islands, so man had to get his living by fishing and growing plants. Thus fine gardens are seen in these islands.

Among the chief fruit trees and plants grown in these hot districts are the bread-fruit, the coco-nut palm, and the banana.

Many roots are grown by man in tropical districts, but before they can be planted the land must be cleared of trees. This is the work of the men.

Iron axes are used by the men for cutting down the trees, but in some out-of-the-way places stone axes are still in use.

A large tree is chosen so that when it falls it will bring down with it the smaller trees, which have already been cut half through. The trees are allowed to lie on the ground for some time, and when quite dry are burnt.

A forest plantation is far different from a farm in England; the crops spring up amongst the burnt tree-trunks.

This kind of planting requires a large area of land, and can be carried on only in countries where the people are few.

With the aid of a hoe, which, in its simplest form, is a stick one end of which has been hardened in the fire, the women go through the field and plant the roots.

The plantation is then left, except for occasional visits for weeding.

When the roots are ready, the women, with the same stick as they use for planting, dig up the roots, carry them home, and from them prepare the food.

The chief roots grown are taro, yams, sweet potatoes, and manioc. Some of these roots contain poisonous juices, which are often used by the men for their darts and arrows.

To extract the poison, the root is scraped and made into a pulp by mixing with water, which soaks up the poison.

The pulp is then put into a squeezer, which is often made of basket work, and the water is forced out.

The powder left in the squeezer is heated and forms a meal, which can be stored for a long time.

Manioc, the root from which tapioca is obtained, was first grown in the hot districts of America, but it is so easily grown that it has been planted in almost all hot regions.

CHAPTER VI

SIMPLE RICE PLANTERS

In S.E. Asia rice is grown. Rice cultivation requires a plentiful supply of water, for the plant must be flooded at certain periods of its growth.

CHINESE RICE FIELDS

[*By permission of the China Inland Mission*]

Thus it is grown with least trouble in low-lying sea-coasts or in the valleys of rivers.

When rice is grown on hill-sides, as it is in Java, Sumatra, India, and China, great labour is necessary.

The fields must be made level and embanked. It must also be possible to get water even at the highest levels.

If the flooding cannot be done by means of the rivers, then canals must be made, and it must be possible to divert the water in harvest time so that the ground will dry.

All this requires many and constant workers, and so the fields belong to the whole village rather than to one man. If the fields belonged to one person, disputes might arise as to the irrigation of the land. In Java the only land a person can call his own is that which he actually clears of trees.

The water must sometimes be brought from a distance. Thus arises the necessity of friendly relations with neighbours, and so peace is brought about.

Some of the people in the island of Sumatra use a plough, and to increase their crops manure the land.

The greatest cultivation of rice, however, is carried on by the people of China and India.

SOUDANESE MOTHER AND CHILD

[*By permission of the Soudan United Missions*]

CHAPTER VII

THE NEGRO—PART I

The pygmies live right in the depths of the Congo forest. Living in the more open portions on the edge of the forest are the negroes.

The negroes vary a little in appearance in different parts of Africa, and the kind of life that they lead depends upon the kind of country in which they live.

They always have a dark skin; sometimes it is quite black. This dark skin protects them from the sun's rays, which are very strong in the open country. Just in the same way, their mop of curly woolly black hair protects their heads.

Their noses are broad and flat, their lips are thick, and when they smile they show two rows of pearly white teeth. Their teeth, however, are not perfect. Some of the front teeth are generally missing from the men's jaws, or perhaps some have been filed to make them sharper.

This is the result of a custom that some negroes have of knocking out the front teeth when the boys reach manhood.

The negroes in very early times learnt how to smelt iron. The furnace that they use is

quite simple, and, instead of coal, charcoal is used to smelt the iron.

The smithy shop is almost always outside the town on account of the danger from fire.

The tools that the negroes use for their iron-working are very simple. A rock serves the purpose of anvil, a weighty stone for a sledge-hammer; and pieces of iron bound to wooden handles are used for the finer work.

Knives, arrow-heads, spears, axes, and hoes are made, and many of these show great skill.

The negroes of the forest regions live chiefly on bananas; but in the places where the forest has been cut down they grow maize, millet, yams, manioc, beans, and other plants. Besides this they fish and hunt, and keep pigs, chickens, and goats.

The negroes do not wear much clothing. There is no need for it in their hot land.

Their clothes are often made of bark-cloth or of woven palm-fibre. But, in some places, home-made cotton cloth is used. This home-made cotton cloth is, however, being replaced by cotton goods made in England.

When cotton is grown, very little time or care is given to it, and as soon as it is ripe it is roughly collected, and tied up into bundles.

The first thing is to get rid of the seeds from the white down. This is done by the children. The women do the spinning and dyeing.

NATIVE WEAVERS

[*By permission of the Rev. W. Vivian, F.R.G.S.*]

The loom used for weaving the cloth is very simple, nothing like the large looms to be seen in the factories of England.

The cloth is woven into strips, which vary in width from six to ten inches. It is cut to suit the length of the material required, and the strips are sewn together until the right width is obtained.

The houses of the negroes of the forest are oblong in shape. They are covered with sloping roofs, which are thatched with dried palm-leaves.

Near to the house stands the store-hut, which is built on piles, so that animals cannot get at the stores.

CHAPTER VIII

THE NEGRO—PART II

THE chief weapons of the negroes are spears, bows and arrows, swords, and plaited shields. The bow tapers at each end and the bow-string is made of plant fibres. The negroes use neither clubs nor slings.

Among their musical instruments are wooden drums, and a strange kind of harp in which each string has its own support.

The use the negroes make of the drum is very wonderful. They use it for sending messages and giving commands; in fact, they make the drum speak.

The negroes are very clever at working with fibres. With these they make mats, ropes, twine, fishing-nets, and hammocks.

Pots are made everywhere by the negroes. They range in size from six-gallon dye-pots down to quite small ones. The smaller ones are used for cooking soup, while the larger ones are used for storing water in the house.

They do not use any tools in making these pots. The clay is got ready for use by beating it with a flat stick, and treading it with the feet.

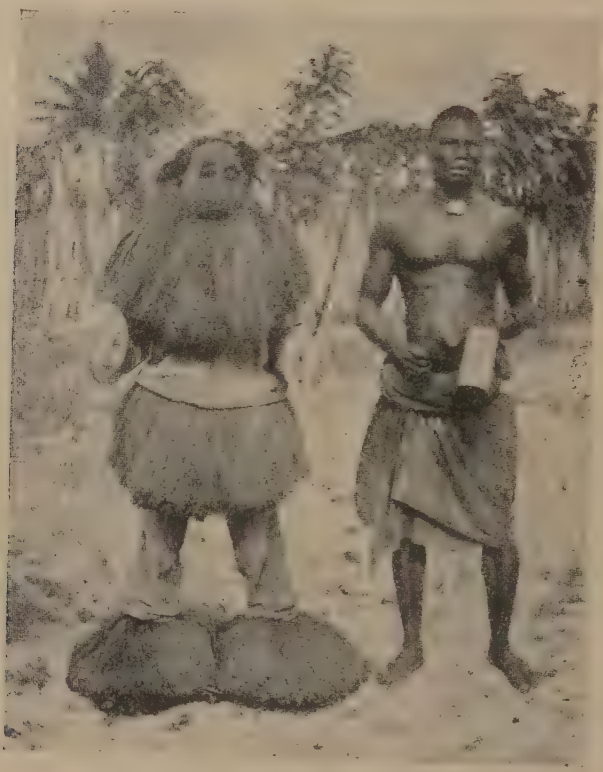
The pots are made by moulding the clay with the fingers, like making mud pies. Another way is to roll the clay into worm-like lengths, and coil them round and round until the bottom is large enough, and the clay is then pressed together with the fingers. The body of the vessel is built up in the same way.

The cracks are filled in, both within and without, a small stick being used for this purpose. They are then finished off with a wash of the finest clay.

The pots, which are first put in a cool place, are slowly made warmer, and are, in the end, exposed to the heat of wood fires.

The negroes are not only iron-workers, leather-workers and cultivators; they are also great traders. Markets are held in nearly all their towns.

On market days the towns are packed with black people, some of whom come from a great distance.



MASKED MAN—THE "NEFARI" DEVIL

[*By permission of T. J. Alldridge, Esq., I.S.O.*]

All sorts of things are exposed for sale, such as cotton cloth, indigo dye, tobacco leaves, palm-oil, pots, cattle, salt, and gunpowder.

Most of the trade is done by changing one thing for another. This is called bartering. Some, however, do use money.

Their money is not like yours Some of them use pieces of iron in long strips like a T-square, others use small shells called cowries.

At the markets there is always a great noise, but there is no disorder of any kind

The different tribes are ruled by chiefs, but there are secret societies which have almost as much power as the chiefs

The men wear masks in connection with these secret societies, and no one is then supposed to be able to tell who they are. The women are not allowed to be present at their meetings.

CHAPTER IX

THE SAVANNAHS

As you go away from the Equator the plant-life becomes less dense, and the trees get fewer and fewer. At last the trees almost disappear, and only grass is found.

This grass is so tall in some parts that a man could walk through it without being seen, but it is not like the grass in the meadows of England; it grows in tufts.

Between the tufts, the earth, which is usually red in Africa, on account of the iron in the soil, can be easily seen.

It is very difficult to make one's way through some of this grass; in fact, in some places you cannot go away from the well-trodden paths.

The grassland, or, as it is better called, the parkland, on account of the scattered trees, encircles the forests of equatorial Africa and South America.

Let us now see why the forest gives place to grassland. It is chiefly due to the smaller amount of rain. As you go away from the Equator the rainfall decreases, and instead of having two wet seasons and two dry seasons, there is only one wet season, which is in summer.

There is no rain all the rest of the year, and the sky is cloudless. The great heat during the dry season scorches up everything. The grass turns brown, forming natural hay, as it does in England during a very dry and hot summer.

This grassland makes excellent grazing ground. It abounds in wild animals, especially in Africa, where it is the happy hunting ground for big game. Lions, antelopes, elephants, rhinoceroses, giraffes, and zebras are numerous there.

Some of these animals have thick skins, but

none have much hair, as it is not needed in such a warm land.

The chief occupations of the people that live on this grassland will of course be the keeping of cattle, but crops are grown in some places.

In Africa, it is not always possible to keep cattle, as in many places there is a fly which, from the noise that it makes, is called the tse-tse fly. This insect kills cattle and horses by means of its sting. Some of these flies also carry the germs of a dreadful disease, called sleeping sickness, from which a great number of people in Africa die.

The presence of these flies helped to bring about slavery. Ivory was obtained in the interior, and beasts could not be used to transport it to the coast; thus it could only be carried by human porters.

The merchants found that they could make more money by selling both the ivory and the carrier. Happily most of this slavery has now ceased.

CHAPTER X

THE ZULU—PART I

The greater part of the grassland in Africa south of the Equator is inhabited by negroes.

They are, however, a different race of negroes from those you have read about in a previous chapter, and are called Bantu negroes.

They are the outcome of a mixture of the negroes of the forest edge who cultivate the soil

ZULU CHILDREN

[*By permission of the Right Rev. the Lord Bishop of Glasgow and Galloway*]

and a race of herders. Thus they both keep cattle and grow crops.

As they could do two kinds of work, it led to a difference in their way of living.

In some places the land invited the people to grow crops; in others the grass was more suited to the life of a herdsman. Thus we find some

of the Bantu negroes are settled cultivators of the soil, and others are wandering herders

These negroes could easily adopt changes of custom, and under a clever leader or chief they became warlike and cruel.

The best known of these people are the Zulu, who are often called Kaffirs, from the Arab word *kafir*, which means infidel or unbeliever. The Moslem Arabs gave this name to all the non-Moslem people of East Africa.

The Zulu made great conquests, and had spread over the greater portion of what is now called the Cape of Good Hope before the coming of the Europeans.

The Zulu have given up their warlike pursuits, and now follow the more peaceful occupations of cattle-rearing and the cultivation of crops.

The latter is left to the women. The chief crops that they grow are maize, tobacco, millet, and kafir corn, a pretty russet-brown grain about the size of millet seed. Beer is brewed from the kafir corn.

The Zulu have a better appearance than the true negroes. Their nose is not so flat and their skin is not so dark, but they still have black woolly hair. Many of them are quite fine-looking men.

They wear little clothing, which perhaps shows that they once lived in a warmer country.

The men wear a loin-covering made from the tails of animals, or else blankets covered with red clay.

They rub their bodies with oil, and some also rub on red clay. Nowadays the Zulu wear all kinds of clothing. Often you will see a man with only a pair of trousers and an old silk hat.

The women have skin petticoats, which are frayed to make them look beautiful, or else they make kilts from blankets. These they adorn with glass or metal beads. They pay great attention to their hair, which they dress in many ways.

The children go naked or wear some of their parents' left-off garments.

All kinds of ornaments are worn, and many of the warriors wear heavy bronze bangles and rings.

CHAPTER XI

THE ZULU—PART II: HIS HOME

Before a Zulu can build his hut he must obtain permission from his chief.

A round space is first enclosed by a fence or hedge. This is his cattle pen.

The huts, one apiece for the husband, for each of his wives, and for each of the adult members of the family, are built in a circle round the pen.

A KRAAL OR VILLAGE

[*By permission of the Right Rev. the Lord Bishop of Glasgow and Galloway*]

Each hut is just high enough to allow a man to stand up in the middle, and is from twelve to fifteen feet across.

To make a hut, the men get about two hundred pointed laths twelve feet long, and stick them in a circle in the ground. The women bind them together at the top, and fasten grass or reeds over them.

There are no windows or chimney to the hut, and you enter it by means of a small opening, which is closed at night by a basket-work door.

The entrance is so small that you must crawl on hands and knees, and thus if an enemy attempts to enter the hut he is at the mercy of those inside.

In the centre of the floor is a hollow, round which is a small circle of earth. This is the fireplace, and on this fireplace wood is kept burning day and night.

The smoke wanders about the hut, and escapes through the thickly thatched roof as best it may. Every Kaffir hut has a smoky smell.

The whole village, or kraal as it is sometimes called, is surrounded by a circular thorn hedge, which in war-time is made so strong that it cannot be taken by Zulu weapons.

The enclosure, like the cattle pen, has only one gate, which is kept closed at night.

The furniture is of the simplest kind. The

bed consists of a grass sleeping mat and a blanket, which is rolled up when not in use.

Earthenware pots, a basket or two for carrying corn, wooden sleeping pillows, and an iron Kaffir pot, bought from the traders, are kept in the huts.

CHAPTER XII

THE ZULU—PART III: HIS WORK

THE women see to all the household work and to the gardens. They have nothing whatever to do with the cattle.

Every morning some of the women go and fetch water. For this purpose they use earthenware pots, which they carry on their heads. This habit of carrying things on the head has helped to make them walk gracefully.

Other women gather firewood. When they return from these duties they prepare the porridge for the mid-day meal. This is eaten with a wooden spoon or with the fingers.

After the mid-day meal is over, the women go to work in the plantations, either planting, weeding, or gathering. The chief tool they use is an iron hoe. The grain, when collected, is ground by the women on rough stones.

The men, after the mid-day meal is over, go off to the cattle kraal, where they can sit and chat.

being quite sure that they will not be overheard by any of the women, for the women must not go near the cattle kraal.

As soon as the dew is off the grass the gate of the kraal is opened, and the cattle are allowed to go out under the charge of two or three big boys.

The boys have fine fun while in charge of the cattle. They often have rides on the animals' backs. The men do not mind this so long as they keep the animals out of the gardens and from danger.

The chief animals kept by the Zulu are goats, sheep, and cattle.

The Zulu are very fond of hunting, and used to be fond of fighting.

Their chief weapons are spears and assegais, but sometimes they use a club as well. For defence they use a shield. Formerly the spear had a shaft 6 ft. long, with a narrow iron head some 4 in. long. Their great chief, Chaka, introduced the assegai. This is a spear with a two-edged steel blade 6 in. long and about 1 in. wide. The shaft of the weapon is over a yard long.

War shields are made of ox-hide. Two are generally made from one hide. They are oval, and high enough to cover a man of middle height up to the mouth. A rod is passed through a row of little slips in the hide, and at

the upper end the tail of an ox or leopard, or a bunch of feathers, is fastened.

The shields are coloured according to the regiments to which their bearers belong, and they are carried in the left hand. If it is wet the shield is useless, and so it is rolled up to make it easy to carry.

When the Zulu wish to run they cast aside their shields because they hinder them. These are picked up by the followers. It is considered a great dishonour to have a shield taken away.

The Zulu deck their heads with feathers when they go on the warpath, and round their shoulders they have strips of ox-hide.

As they go along they chant war-songs, and pretend to strike imaginary foes, yelling all the time.

A very little thing, if they think it is an unlucky omen, will stop a tribe when they are going to war.

At the present day peace reigns amongst the Zulu, because they are under the rule of the Great White King.

CHAPTER XIII

THE DESERT

The grass slowly becomes thinner and more tufty as one travels away from the

Equator, until at last no more grass is seen.

You have now come to a land where there are hardly any plants at all. It is still warm, but there is no rain. Year after year passes, in some parts, without any rain falling. It is this want of moisture that keeps the grass and trees from growing.

As a rule, the only water that the traveller has is that which he carries himself, but occasionally water is found in these dry lands. Where there is water, trees and other plants grow. These fertile spots are called oases, and make it possible for man to cross these dry lands.

These dry, bare regions are called deserts. In most places the desert is sandy, but there are parts where it is stony, and parts where it is bare and rocky.

There are sand-hills in some places which are often much higher than your school. It is no easy matter to cross the sand-hills, or dunes as they are called, as the feet of both man and beast sink into them. Besides, these dunes are not still; the sand is always moving. They are like the waves of the ocean.

Now, where did the sand come from? It came from the breaking up of the rocks.

The sun shines with great brilliancy during the day, and, as there are no trees to give shade,

The bare rocks of the desert are made very hot, while at night time in this cloudless country it is very cold.

These great differences in heat break up the rocks in the same way that a hot glass will break when placed in cold water.

A THIRSTY COUNTRY

[*By permission of J. Harding King, Esq., F.R.G.S.*]

The large pieces are broken into smaller pieces. Then the wind takes them and rolls them along, and they become smaller and smoother, until in the end they become sand.

When the desert is carefully examined a few plants may be seen, but they are small and far apart.

If a shower of rain happens to fall—but this is very rare—some plants grow up at once. They grow quickly, and as they receive no more water they soon wither.

The plants that grow in the desert are so made by Nature that they can withstand drought. Some have very long roots, so that they can get to the water deep under the surface of the sand, whilst others have thick stems or roots, in which they store their moisture.

As plants lose a great amount of water by the air taking it from their leaves, desert plants either have no leaves, or else the leaves are very small, or become mere spines.

The water is kept in other plants because the leaves have a tough skin, which is often covered with gum that is given out by the plant.

In the desert lands it is difficult for animals to find food. The animals therefore are few, and are well protected by the colour of their skin, which closely resembles the colour of the sand. Camels, sheep, birds, and reptiles are all yellow in colour.

As it is necessary for the animals to travel great distances for water and food, they are marked by their light build, their long legs, and their large and quick eyes. If the animal is not fleet, then it can go a long time without food and water.

The camel is the chief of all desert animals.

There are two kinds of camels. Some have two humps, and some only one hump. Those with two humps are found in Central Asia.

A LADY'S TENT ON A CAMEL

[*By permission of J. Harding King, Esq., F.R.G.S.*]

The dromedary is the name given to the fastest and fleetest camels, which are worth far more than the beasts which are used for carrying baggage.

The camel is specially adapted for living in the desert. Each foot has two toes, which can be opened out so that the animal will not sink into

the sand. Its nose is so made that it can be closed at will. This is of great use to the animal, for in the land in which it lives the air is often full of sand, and by closing its nostrils it can keep the sand out.

Not only can the camel store up food in its hump, but it is so made that it can store up water in its stomach. Travellers across the desert, when hard pressed, often kill their camels to get this water.

The camel has hard flesh on its legs and breast, so that it will be at ease when it kneels, which it always has to do when it is being loaded.

This animal is most useful to the people of the desert. They could hardly do without it. It carries them from place to place, gives them milk, and when it is dead they eat its flesh.

CHAPTER XIV

OASES

It is no easy matter to cross the great Sahara desert of North Africa. There are so many dangers. At any moment the caravan may be overtaken by a sandstorm, attacked by robbers, or led astray by what is called a mirage.

It would not be possible to cross the desert

at all, if it were not for the existence of water-wells here and there, where the camels can drink and the leathern water-bottles be filled. Some of these wells are kept covered up and

A CORNER OF AN ORANGE AND DATE GARDEN

[*By permission of R. Renwick, Esq., F.R.G.S.*]

hidden, so that the wandering Arab, with his flocks and goats, may not use them.

Where there is a little more water, a few palm-trees and mimosa grow. These provide welcome shade from the sun, and the weary traveller is able to rest.

A fence of palm-leaves or mats is generally built round the outside of these small oases to keep back the sand. If this were not done, the

sand would be blown in, and everything would be covered.

The people who live in this desert are called Arabs. Where there is any grass the Arabs are able to keep a few goats, but when the animals have eaten all the grass, fresh pasture must be found. The Arabs are therefore wanderers, or nomads, and live in tents.

The tent consists of a framework of poles, which are held in their place by ropes, and on these is a covering of haircloth. The side opposite to the wind is open, but the tent is so made that the side-cloths can be shifted; so that the back of the tent may in a moment be the new front.

Two or three thin mattresses are spread on the sandy floor of the tent, and these are covered with a sort of blanket. There are also richly coloured rugs, and on these are soft leathern cushions or pillows.

Sacks which contain their food, clothing, and other things hang along the side walls; and on the ground are earthenware lamps. The utensils, most of which are made of wood so that they cannot be broken, are kept in the women's quarters.

Where there is plenty of water a large oasis is found. In the large oases, wheat, date-palms, and all kinds of fruits are grown.

The date-palm is of the greatest importance

to the Arab. It is his all in all. The fruit keeps him on his journey across the desert, the stems

WARGLA—AN OASIS

[*By permission of J. Harding King, Esq., F.R.G.S.*]

provide door posts, and the leaves are used for making mats, baskets, and sacks.

These large oases serve as resting-places for caravans, and here, too, people come to buy and sell. Thus a town springs up.

Many of these towns are surrounded by walls, and the gates in the walls are closed every night for safety.

Since the land in the oasis is required to produce food, little space can be spared for the making of streets. Thus the streets are very narrow. This is an advantage in the daytime, for the narrow streets are shady, but at night they are very dark. Where the narrowness of the streets does not give enough shade, arches are often built over them.

The houses of the Arabs are built of sun-dried bricks made of mud. They are generally built round a courtyard, and all the windows open on to the courtyard, and not on to the street. This is to prevent passers-by from looking into the houses.

The houses have flat roofs, and the Arabs often spend the cool of the evening on these flat roofs. Luckily they have no rain there or the houses might melt away.

Towering above the flat roofs of the houses are the dome and minarets of the church, which is called a mosque. The Arabs are not Christians like the people of England, but follow a religion founded by Mahomet. Followers of this religion are called Moslems.

There are no bells in the mosque, so the priest goes on to the roof and calls out the hour of prayer.

In the centre of the oasis there is a large open space used for drying dates, or for stabling the caravans that pass through the town. Sometimes it is used as a market place. Caravans from all the places round about come in bringing dates, grain, flour, live-stock, tent-cloth, and carpets.

The carpets are beautifully woven, and are made entirely of wool. They are worked by the women in their spare time while their husbands are away acting as guides.

The large oases are the centres of great trade, and much wealth is obtained from the caravans that pass through them.

CHAPTER XV

THE ARABS

Two kinds of life are led in the desert: a more or less settled life at the oasis, and a nomadic or wandering life elsewhere.

The settled Arab tries to extend his oasis by carrying water in canals, and he has taught people in other countries how to do this. The nomad Arab is apt to destroy things, and the difficulty he has in getting a living often makes him turn robber.

Living in the west of the Sahara is a different

race of people from the Arabs. They are called Tauregs, and were driven into the desert from their own country by the Arabs many years ago. They live by robbery, and move about so quickly and secretly that they are said to come and go like the wind.

The Tauregs are a great danger to all caravans, but they are cowardly, for they only attack at night-time, and when they are sure that no one has seen them.

They rarely visit the oases, and when they do so are far from welcome, for the Arabs know that they have only come to spy.

These robbers are masked, that is, their face is almost completely covered by a veil. Both men and women mask their faces. Some wear white veils and some black.

Since the Tauregs are always moving from place to place, they, like the nomad Arabs, dwell in tents.

The Arabs are fine-looking men, with jet-black hair, and a rather long face with a narrow straight nose. They are shorter than Englishmen, being about 5 ft. 4 in. in height.

They do not dress as we do, for they wear no coat or trousers, but are clad in a long flowing robe.

The Arabs rarely allow their womenfolk out of doors. If the women do venture abroad they are so covered up that only their eyes are seen.

Indoors they cast off these coverings, and are then seen in all their beauty.

Many of the Arabs earn their livelihood as caravan leaders. They are wonderful men, and know the desert as sailors know the sea.

The stars guide them at night, but during the day, when nothing points the way that other

TAUREGS AND THEIR TENT

[*By permission of J. Harding King, Esq., F.R.G.S.*]

caravans have taken, and when the wind covers the track of every camel almost as soon as it is made, they find signs unseen by others which guide them aright.

The Arab guide knows every spot where water is to be found, and this is most important when crossing the Sahara, which is the largest of all deserts.

Not only is the guide able to guide you across the desert, but he knows what is best to be done at all times. He knows how to prevent break-downs, or to avoid peril by the way.

He cuts a fine figure on his beautiful one-humped camel, which answers to every sound that he makes.

The Arab mounts his beast quite easily, but if you were to try you would find it a very difficult matter.

The camel rises, first on his fore-knees, then on his hind-legs, and at last on his fore-legs, and it takes quite a long time to get used to the jerks caused by these movements. No doubt you would fall off.

The Arab children who live in the oases go to school. An Arab school is not at all like an English school. It is held in one of the mud houses. The scholars sit round their teacher chanting the lesson they have to learn, and the noise they make is deafening.

Arabs also live in the great Arabian desert.

There are other deserts in the world besides the Arabian desert and the Sahara. They are all very thinly populated, and the inhabitants have a very hard life.

CHAPTER XVI

WHITE MEN AND THE TROPICS

You have read in the previous chapters about the life led by the people who live in the hot regions of the earth. Their manner of living has been shown to depend upon the climate.

Where there is a great deal of rain the inhabitants are few in number, and they obtain their living by hunting and gathering roots and fruits in the dense forests.

It is fairly easy to clear the land on the outskirts of the forest. There the trees are not so numerous because the rainfall is less. Therefore simple agriculture or gardening is carried on.

The open forest land gradually gives place to grassland or parkland as the rainfall becomes still less, and here we find the nomadic life of the herder.

All signs of vegetation begin to disappear with a further decrease in the rainfall, until at last we have deserts. Here there is a settled population at the oases, and a wandering people in the deserts themselves, where the men are either caravan-leaders or robbers.

Few Europeans can live in these hot regions, except in the highlands, where the altitude makes the heat less and the country healthier.

The most difficult part of all for the white men to settle in is the tropical forest. Here, owing to the great rainfall, the land is always more or less wet. This damp ground is the breeding-place of myriads of mosquitoes.

These insects carry the terrible disease called malarial fever from one person to another. You have already read how the tse-tse fly carries the sleeping sickness in Africa, and makes it impossible for cattle, horses, and sheep to be kept where this fly is found.

So unhealthy are some parts of the tropical regions that they are often spoken of as "the white man's grave."

Thus the great difficulty to be overcome is disease. Clever doctors are, however, finding out how disease can be got rid of. When this is done, then the white man will be able to open up these rich parts of the world.

All the trouble will not be over then, for it is very hard to make roads and railways in the tropical parts of the world. Plants grow so quickly that roads and railway lines are soon overgrown, and the heavy rains often wash the earth and rails away.

Besides, wooden sleepers quickly rot in these wet lands, or are eaten by an insect called the white ant, or termite.

At the present time the Europeans who go to these parts of the earth only direct the labour

of others, or act as merchants. All the hard work is done by the natives, because the hot damp climate robs the European of his energy and strength.

CHAPTER XVII

PRODUCTS OF THE HOT BELT

Two important occupations followed by some of the natives in the tropical forests are the cutting down of timber, especially mahogany, and the collection of rubber.

When it has been decided which tree is to be felled, a simple platform is built round it a few feet above the ground.

Two men mount this platform and ply their axes and saws until they hear a cracking noise. Then they slip down, and get a safe distance away.

Presently a heavy thud tells them that the great tree has fallen. The men return, the branches are cut off, and the trunk is then ready to be dragged to the nearest river. It is then floated down to the sea in readiness to be put on board a steamer.

The natives who collect rubber go to the rubber-trees and make a number of gashes in the bark. Under these they fix earthenware or tin cups to catch the sap.

A native will often tap as many as a hundred trees in a day, if they are not far apart.

The collector returns at night, or the next morning, and empties the contents of the cups into a larger vessel which he carries. He also makes a new set of gashes a few inches lower down the tree.

As soon as a sufficient amount has been collected, a fire is lighted, and a wooden paddle is dipped into the rubber-milk. This paddle is held over the fire to make the juice solidify. This process is repeated until a thick cake of raw rubber is formed on the paddle.

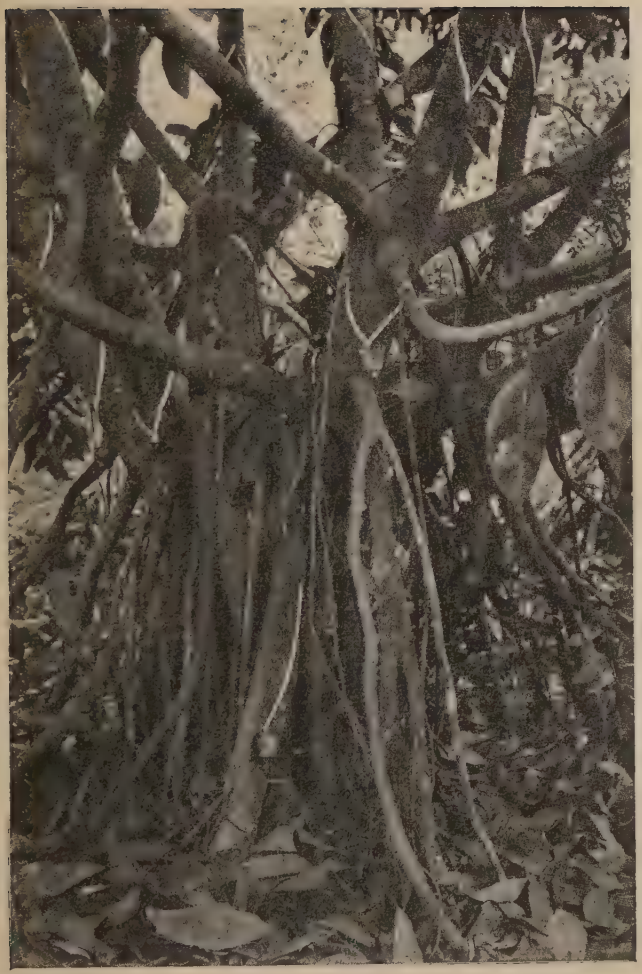
A slit is then made down one side of the paddle, and the rubber is removed. It must now be purified before it is fit for use.

Rubber is used for such a number of things at the present time that the quantity collected from wild trees is not sufficient for man's needs. Plantations of rubber-plants, therefore, are being made in nearly all the hot, wet parts of the world.

Many other trees in these regions give useful products. Some provide us with valuable gums and drugs, while the sago, oil, and coco-nut palms yield substances that are useful to man.

Manioc, rice, cacao or cocoa, the sugar-cane, and bananas are also grown, and, in the hilly districts, coffee.

The savannahs or grasslands of Africa yield



A RUBBER TREE

[*By permission of the "Rubber Journal"*]

ivory, skins, and hides. Agriculture can also be carried on in these parts of the earth. Maize, millet, cotton, and tropical fruits are the chief crops that are grown.

There is often a prolonged drought in many parts of this parkland, and a loss of animals and crops follows.

It is in the higher parts of the savannahs that further development is looked for, because there the climate is quite suitable for Europeans.

In the great deserts, it is only at the oases that useful products are obtained, such as dates, gums, skins, carpets, and rugs.

In some parts of the desert, large quantities of salt are found, and this is sold to the people of the neighbouring countries that have none.

CHAPTER XVIII

THE TUNDRAS

The hot regions that you have read about are far to the south of Britain; but if you travelled northwards from England you would find that it would gradually get colder and colder until at last it would become very cold indeed.

If you went to these cold regions of the earth in winter you would notice that the sun never shone. It would not, however, be quite dark,

as there is a bright light in the heavens, which is called the Northern Lights. A similar light shines in the cold regions in the south.

During the summer the sun does not set in the far north, but continues to shine day after day without a break. In consequence of this it is often spoken of as the Land of the Midnight Sun.

The sun, however, never rises very high in the sky, so the rays are very oblique. It is because of this, and of the absence of sun during the winter, that it is so cold.

When the land happens to be high, as it is in Greenland, snow lies on the ground all the year round.

This snow gets deeper and deeper year after year, and that which is underneath becomes pressed and changes into ice.

This ice moves very slowly down the slopes of the mountains, and forms what are called glaciers. If the glaciers reach the sea, huge pieces break off and float away as icebergs. When you look at an iceberg, you only see a small portion of it, for nine-tenths of it is under the water.

Where the land is always under snow hardly anything will grow, so there will be no food for animals, and man will only be able to live along the coast, where he can get his food from the sea.

In the lowland districts the snow disappears during the short summer, but all the rest of the year the land is under a mantle of snow. The furs of many of the animals that live here are also white in winter to match the snow, their coats becoming brown again in summer.

Such are the Tundras of North Europe and Asia, and the barren lands of North America.

In winter the rivers are frozen over, and the land is all covered with snow. When, however, the sun comes above the horizon the air becomes warmer, the snow begins to melt, and the ice on the rivers to break up.

It is only the surface, however, that thaws, and, if you were to dig down a few feet, you would come to frozen earth even in summer. The water from the melting snow cannot sink through, so it lies on the surface, and makes the land marshy.

The land is made more marshy because the rivers flow northward, and so the upper reaches of the rivers thaw first. The water is kept from the sea by the ice in the lower reaches, and thus helps to flood the land.

Since only the surface of the land thaws, none but plants with short roots can live, and these must also love damp places, like mosses and lichens.

A few dwarf bushes also grow, and many of these yield berries. If there are any trees they

are quite small birch trees with silvery barks, and along the river banks are a few willows.

With such a poor growth of plants there cannot be very many animals. Of the few that there are the reindeer is the chief. It lives on a kind of lichen called reindeer-moss, and is so made that even in winter it can turn up the snow with its hoofs or horns, and thus find its food.

Besides the reindeer there are some smaller animals that live on the low berry-bearing bushes. Many birds fly hither during the short summer to feed on the berries and the myriads of mosquitoes that are bred amongst the marshes of this region.

CHAPTER XIX

THE LAPPS

The Lapps, who came from Asia a very long time ago, live in the Tundras of N.W. Europe. They are the dwarfs of Europe, the men rarely growing taller than five feet. Perhaps the hard life they lead is the cause of their stunted growth.

These people are somewhat bow-legged, and are bad walkers. This is the result of the cramped way in which they sit in their sledges, and their awkward method of squatting on the ground.

Their faces are very short and almost round.

They have dark hair and eyes, but as they have been in Europe a very long time, they are beginning to look more like the people of that continent.

By far the greater number of Laplanders are herders of reindeer, but those who live near the coast are fishermen.

The reindeer is everything to the Lapps. While it is alive it gives them milk, which is drunk fresh, or made into cheese for winter use; and it draws their sledges from place to place. When it is dead its flesh is eaten, while clothes and tent coverings are made from its skins. These are sewn together with thread of reindeer sinews and needles of reindeer bone. Glue is also made from its hoofs.

The Lapps count their wealth according to the number of reindeer they have. Three hundred are enough to keep a Lapp family. If a man possesses a herd of five hundred or more he is said to be a rich man, while the very poorest have only half a dozen animals.

When the reindeer have eaten all the "moss" in one district the people must move to a new spot. Their home is therefore a tent. This is conical in shape, and is made by taking a number of thin smooth poles four to six yards long, and pointed at both ends. Two of these are first placed in the ground, bent towards each other, and tied with a short cord to serve as a

INTERIOR OF A LAPP TENT

[*By permission of M. Sommier*]

support for the rest. The others are fixed in a circle.

The outer covering is made of birch bark that has been boiled to make it pliant, or of reindeer skin. Nowadays a coarse woollen cloth is also used. A hole is left in the centre to let out the smoke from the fire that burns in the middle of the hut, and over this hangs the pot in which the food is cooked.

Boards, or, at least, mats, are laid down to serve as a floor; and mats made of bundles of sedge, or of the long-haired reindeer skins, and cushions stuffed with reindeer hair or dried moss, form the bed. The bed clothes are of fur. The Lapps, like most Asiatic peoples, have no chairs in their tents.

When they travel to another spot, the tents are taken down by the women and packed on a large sledge. Often several of these are joined together, reindeer are harnessed to them, and off they go.

Smaller sledges are used for the people to sit in, and the traveller sits in this strapped round with reindeer skins, as he does in a canoe.

Sometimes the Lapps use snowshoes or ski, which are pieces of wood about six feet long and three or four inches wide. These are fastened, one on each foot, and attached to a reindeer. In this way the Lapps can travel as much as eighty miles a day over the frozen snow.

In summer, however, when the snow has melted, it is very difficult to travel from place to place; then eight to ten miles is as much as can be done in a day.

Besides looking after the reindeer, the men catch fish in the rivers during the summer, and snare birds; while the women milk and look after the reindeer, make the clothes, and do other things connected with the home. The children wander about collecting the berries. These come as a welcome change to their daily diet of reindeer milk and flesh.

The Lapps often go southward in winter to the slightly warmer forest lands, where the trees help to protect them from the cold winds. During this season the men go into the forest to hunt animals for their furs.

The Lapps have been Christians for nearly two hundred years, but many of them still hold to some of their heathen ideas.

CHAPTER XX

OTHER TUNDRAS PEOPLES

Other peoples besides the Lapps live in the tundras, and some of these have a more difficult task than the Lapps to get food for themselves and their children.

In the north of Asia there live peoples who

have the largest herds of reindeer of all the tundras tribes. Their animals, however, are wild, and so give no milk, neither can they be harnessed to the sledges. They are kept for food, and to sell to the other tribes.

Then there are those tribes who have no reindeer at all, and can live only by hunting, fishing, and trading; often they depend upon other tribes for their reindeer flesh.

All these tundras dwellers, like the Lapps, are short of stature and clothed in skins. One of the poorest tribes is dressed in fish skins. They live near to the Chinese, who have given them the name of fish-skin-clad people. These peoples are the weaker tribes that have been driven into these desolate regions by stronger peoples.

Some, however, are very hardy. The children run about naked in the snow, while the adults often lie exposed to the cold. Thus they have been called "men of iron."

All these tribes live in tents because tents are so easy to take down and put up again; but in winter they sometimes build log-houses, and use ice for windows.

In front of the tents of the fisherfolk are stands on which they dry their nets and fish. Beside these there are baskets and boats. The boats are small, and neatly made of skins and wood.

Sometimes the fishermen almost dam up a stream, and catch the fish in baskets and on

lines, which they place in the opening left in the dam. In winter, when the rivers are frozen over, holes are made in the ice, and the fish are caught by means of lines.

While the men are away fishing they eat raw fish, but, on their return, the fish are divided among the different households. The men are then given a hot meal and some tea. After this, the harp and zither are brought out, and dancing and singing take place till bed-time.

Next morning the women open the fish, eating the raw livers as they do so, and throwing pieces to the children. Some of the fish are then dried ready for winter use.

When the men hunt the wild reindeer, they sometimes tie thongs across the antlers of a number of tame deer, and turn them loose one by one in the neighbourhood of a herd of wild reindeer.

The wild animals at once begin to attack the tame ones. They get their horns entangled with the leather thongs, and thus fall an easy prey to the bows and arrows of the cunning hunters.

Sable, elk, stag, and squirrel are hunted in the forest, and towards the end of winter the huts become full of skins. These are sold at the fairs.

When they go to these fairs they wear gala costumes and take with them the spoils of the

chase. These they exchange with the Russian merchants for flour, lead, tea-kettles, glass beads, and other things useful to them.

Most of these tundras people are heathen, and are under the control of their priests or witch doctors. Even those who have become Christians are apt to return to their old gods if they are in any trouble.

The barren lands of North America are inhabited by a few wandering Indians. They have a very hard life, as there are no tame reindeer there. In their place there are the cariboo, which are a kind of wild reindeer. The Indians hunt the cariboo, and they also catch fish in the rivers. Like the other peoples of the tundras, they live in tents.

CHAPTER XXI

THE ESKIMO—PART I

Along the coasts of Arctic America and Greenland there live a race of people called the Eskimo.

The interior of these parts of the world is almost always under snow, and very little food can be obtained from the land. In fact, the Eskimo depend upon the sea for everything.

Fortunately for these people, they very early found out how to make a lamp. This they make of a soft stone called soapstone, using the

ESKIMO OF LABRADOR
(Note the kayak by the side of the skin tent)

Photo: Dr. Grenfell

[*By permission of the Moravian Mission*]

blubber of the seal for oil, and dried moss for a wick. The lamp gives them light and heat during the long winter.

Since their food and clothing come from the sea, they are forced to find means to go upon it. Thus they must have boats. Trees do not grow in their country, so they make their boats out of the wood washed up by the sea, and the skins of the seals, which live in these cold regions. Wood washed up by the sea is called drift-wood.

A framework is made of the drift-wood, and this is covered over with seal skins neatly sewn together by the women.

This skin boat, or kayak as it is called, tapers to a point at both ends. In the middle is a hole just large enough to admit the legs of the Eskimo. On the top of the canoe are a number of straps, under which he places his weapons so that they are always ready at hand, and to these straps he ties the seals that he kills.

They go out in these frail boats even in the stormiest weather, and very seldom come to grief.

The Eskimo needs weapons, and in the making of these he has shown great skill. His principal weapon is the harpoon, and this is made from drift-wood, and ivory obtained from the walrus, another large animal that lives in the Arctic seas.

The harpoons are so made that, when the arrow-head sticks into an animal, the shaft rises to the surface, and so the wood, which is so valuable, is not lost.

Besides the harpoon, the Eskimo has a lance and some small darts. Bladders are fastened to many of these darts. When a dart is thrown and strikes an animal the bladder floats on the top of the sea. As the animal plunges, the Eskimo, by means of the floating bladder, can see where it is.

Some of the Eskimo use bows. These are made by carefully binding small pieces of wood together.

The chief sea-animals that these men hunt are the seal and walrus, while the halibut and salmon are the chief fish caught. Snares are set to catch the various birds that visit Greenland in summer.

During the winter the sea is frozen; then the Eskimo cannot go upon it, and it is with great difficulty that he obtains his food.

Luckily for the Eskimo, the seal, like man, must have air to breathe, and so it makes a hole in the ice with its breath, and thrusts its head above the water to breathe.

The hunter stands by one of these holes, and, as soon as he sees the head of a seal, he kills the animal with his lance.

During the short summer some of the Eskimo

go inland to hunt the few wild reindeer or cariboo that live in these desolate parts.

The great enemy of the Eskimo is the polar bear, and his chief friend is the noble Eskimo dog. It is the only animal that he can keep, because the dog is a flesh-eater, and can eat what his master leaves.

Since it is so very cold in their land, the people must eat plenty of fat in order to keep themselves warm. This fat is provided by the blubber of the seal, and the Eskimo are so fond of it that they often eat the blubber raw.

CHAPTER XXII

THE ESKIMO—PART II

The Eskimo are rather short of stature, because of their poor living. Their legs are stumpy, the result of being always cramped up in their canoes.

Their faces are round, and their hair is straight and black. Often in the inner corner of their eyes, which are dark, there is a peculiar fold of the skin. In this they are like the Chinese.

The men allow their hair to grow long, and they keep it out of their eyes by means of strings of beads. The women brush their hair up into a top knot, and they vie with each other to see who can get it the highest.

AN ESKIMO WOMAN

[*By permission of the Moravian Mission*]

The Eskimo are clothed from head to foot in furs, and, as it is so cold, their hat is a kind of hood, and covers up their ears. Their skin gloves are so made that they can be attached to the coat sleeves.

The boots they wear reach to the knees. They are made of two layers of skin, and dried moss is stuffed between the layers to help keep the feet warm and dry.

Both men and women dress alike, and so it is difficult to tell whether you are talking to a man or a woman.

In winter, they build a snow-house, or igloo as it is called. When building their snow-houses they very carefully select snow that came down at one fall, because it will bind together. They cut wedge-shaped blocks of snow, put them together, and thus produce a dome-shaped hut.

Often the snow-hut is built over a shallow hole. In some places, the Eskimo, instead of building a snow-hut, erect over the hole the ribs of a whale, and cover them with skins.

A long tunnel often leads to the hut, which is so low that the Eskimo have to crawl on their hands and knees to get into it.

There is a skin door at each end of the tunnel, and at night the dogs sleep in this passage.

Inside the hut is a platform on which the people sit and sleep. This platform is divided

into sections, one for each family, since there is often more than one family living in a hut.

A lamp burns before each section, and it is the duty of the women to feed the lamps with blubber. There is no chimney, and the inside

SNOW-HOUSE OR IGLOO

[*By permission of the Moravian Mission*]

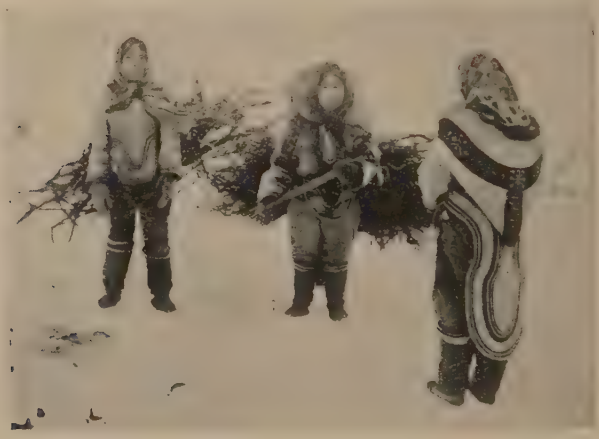
of the igloo becomes so stuffy and hot that the Eskimo cast off their fur clothes.

When summer comes, the snow-house is of no use; besides, many of the people go inland after deer and salmon, or on long journeys to obtain soapstone. A tent is used then. This is made of a framework of whales' ribs or drift-wood covered over with skins.

When a family move they sometimes use a

sledge drawn by dogs, or, if they go by water, they use a large skin boat, called the woman's boat, because the women row it while the men steer.

The women attend to the home, prepare and sew the skins together for clothes or for the



ESKIMO WOMEN COLLECTING DRIFT-WOOD

[*By permission of the Moravian Mission*]

kayaks. The men hunt, and during the long winter spend their spare time in making new weapons and decorating old ones, or in carving ivory.

Some of the carvings are records of events. They cannot write as you do, but use pictures to express their thoughts.

The Eskimo are very fond of their children,

and are, moreover, kind to everybody. They will give food and shelter even to their worst enemy, because they know that if they do not

ESKIMO CHILDREN IN A MORAVIAN MISSION SCHOOL

[*By permission of the Moravian Mission*]

he would die. They do unto others as they would be done by.

Since the Eskimo have come into contact with the Europeans they have begun to decrease in numbers. They now sell their skins, and buy cloth which does not keep them so warm as their skins did. Besides, the white men have brought bad customs and diseases which the Eskimo cannot withstand.

CHAPTER XXIII

THE TEMPERATE REGIONS

MANY years ago these islands of ours were covered with forests. The forests have now been almost completely cleared away to make room for man's abode and for his crops.

If you cross the North Sea you will come to the continent of Europe. The western part of Europe was also covered with forests, but it is only on the higher ground that forests are now found.

When you travel farther east you at last come to a land where you can go mile after mile without seeing a tree. These lands of south-east Europe are covered with grass, and are known as steppes.

The steppes stretch far into Asia, and in places the grassy land gradually passes into deserts.

But, if you cross these vast steppes, trees will begin to appear again, and, at last, you will reach the great Pacific Ocean.

Thus you see that on the west and east side of the large land mass of Eurasia are forests, while in the centre is grassland.

If you continue your journey, and cross the great Pacific Ocean, you will come to the west coast of North America. Here again you will

find forests, many of the trees being of great size.

At the town of Vancouver you can board a train that will take you across the continent.

The railway passes for a hundred miles through mountainous country, following for some distance the river Fraser, noted for its salmon. The river is crossed and re-crossed, and you can see it flowing far below you in its deep gorge.

Ahead of you is the mighty range of the Rocky Mountains. The train slowly ascends, and you feel that it is becoming colder and colder. At last the train goes through the Kicking Horse Pass, and begins to descend on to a level plain that stretches away for miles.

At first you see grass on which are reared great numbers of cattle and horses. In bygone days, however, large herds of bison used to wander over these grassy plains, or prairies. These are now all gone, and all that remain of them are a few that are kept in the great national parks of America.

On the train goes, still over level land, but wheat begins to appear. Before the coming of the white men this also was grassland, but, as there is more rain than in the west, wheat can be grown.

Mile after mile you travel through wheat fields, which in winter are covered with snow.

Then you pass into another region of forests, and come to the east coast of the continent.

So you see that also in America there are forests on the east and west, and grassland or prairies in the interior.

The part of the earth you have been travel-

BREAKING UP THE PRAIRIE

[*By permission of the Canadian Government*]

ling in is called the temperate region, and it lies between the hot and cold regions. Now, why should there be forests on the coasts and grassland in the interiors?

If you will watch the winds that blow in this country, you will find that westerly winds are the most frequent.

This is true of most temperate lands, and because of this much rain falls on the western sides of large land masses.

The west wind comes from the ocean laden with moisture, and, meeting the mountains which lie near to the west coasts, is forced up and chilled. Thus clouds are formed, and rain falls.

Besides bringing rain, these winds make the land warm in winter, and cool it in summer.

Beyond the mountains the rainfall is very small. It is only in the early summer that rain falls. Also, the land here is far from the ocean, and does not receive a wind that will warm it in winter or cool it in summer. Thus it is very cold in winter and hot in summer.

The winter is not only severe but long, and as the rain only falls in the early summer there is but a short period of growth, often not more than three months. This is not sufficient for trees, and, besides, trees cannot stand cold dry winds.

Farther north, but to the south of the tundras, a belt of forest stretches from one side of the land mass to the other. The trees forming this forest belt are specially fitted to stand the dry cold climate. They are conifers.

On the eastern side there is enough rain for trees to grow, but it is colder there in winter than it is in the west, since the eastern coast does not receive warm winds from the sea.

CHAPTER XXIV

THE STEPPES

In the previous chapter, you have read that the steppes are the treeless grassy plains found in the south-east of Eurasia. They are of vast extent.

You have also read that somewhat similar lands are found in North America, where they are called prairies.

In the southern hemisphere, the temperate regions of the continents are much narrower than in the northern hemisphere, and thus there is a far smaller area of grassland in the southern than in the northern hemisphere.

In temperate South America the grassland is called Pampas; in South Africa, Veldt; and in the south-east of Australia, Downs.

You have already been told that the absence of trees is due to the small amount of rainfall, and the short period of growth. But perhaps the grassland has increased in size by the destruction of forests, and, of course, if the soil is poor, trees will not grow.

Some seeds, carried by the winds and the birds, and by other means, find their way to the steppes and sprout, but the grasses grow more quickly than trees and speedily choke them.

The steppe land of Eurasia is not quite level.

It rises higher and higher towards the south and east.

In winter the vast treeless land is covered with snow. About April the snow begins to melt, and quickly disappears. The thirsty soil sucks up the moisture supplied by the melting snow, and the two magicians, sun and water, set to work.

The almost desert lands blossom forth. Buds are unpacked, flowers unfold, and the steppe becomes beautiful. Vast areas look gorgeous with tulips, yellow, dark red, and white. Immediately after the tulips come the lilies, which appear in much greater quantities than the tulips. As a rule each kind of lily is found by itself, but here and there blue and yellow lilies are mixed together.

Every day brings some new tint, and after a few weeks the steppe lies like a gay carpet, in which all the tints can be easily seen.

The grasses of the steppe land do not grow close together as they do in English meadows, but grow in tufts. They are stiff, and have very narrow leaves.

With the spring and the flowers, animal life begins to awaken. Birds which fled in autumn begin to return, and animals that sleep through the winter open the doors of their burrows and join those animals which are able to bear the winter cold. The steppe is now full of life.

When the small summer rainfall is over, everything begins to assume a parched appearance. All the steppe becomes brown.

The wells dry up, the men assume a lean and haggard appearance, the animals become quite tame, and thousands of cattle often die of thirst.

Burrowing rodents live in their thousands in the steppe, and, when the burning sun has scorched up every blade of grass, support their life on underground roots or bulbs of plants.

The morning dews supply the only moisture that some animals get, while others are specially made by Nature to withstand thirst.

You have already learnt about the camel of the Sahara and Arabian deserts. The camel also lives in the steppe land.

Many of the sheep of the steppe are of the fat-tailed kind, or rather fat-rumped race, for their very short tail is hidden in the cushion of fat formed below the tail, and spreading like a bag over the hind-legs. This bag disappears in time of famine, like the hump of the camel.

The tails of the sheep sometimes become so heavy that their keepers make small trolleys for them. The tails rest upon these trolleys and thus the sheep are helped to drag their tails behind them.

Even the people who live in these lands can go without food for some time, in some cases

KIRGHIZ NOMADS MOVING THEIR CAMP ACROSS THE STEPPE

[By permission of Douglas Carruthers, Esq., F.R.G.S.]

for as long as three days. When no water can be obtained they pull out some hairs from the manes of their horses and munch them.

Not many cows are kept, because they require richer pastures than those of the steppes. But yaks, which are not so dainty, yield more milk, so they are kept instead. Most of the animals of the steppe are long-legged. This enables them to travel quickly across their dry country.

In places the steppe is changing, and wherever there is enough water white men are growing wheat. It makes excellent wheat land. The level land is easy to plough, the soil is rich, and the dry summer quickly ripens the grain.

CHAPTER XXV

THE STEPPE-DWELLER—PART I: HIS HOME

The people who live in the steppes are shepherds. They rear and keep vast herds of camels, horses, sheep, yaks, goats, and perhaps a few cattle. The herders look down upon farming, and only turn to it when they have lost their flocks.

The animals quickly eat the grass in one place, and then the shepherds must lead them to fresh pastures. They never stay in one place very long.

YURTS OR TENTS OF KIRGHIZ

[By permission of Douglas Carruthers, Esq., F.R.G.S.]

Besides, in summer, the lowlands become scorched by the sun, and the animals must be driven up into the higher districts, where the rich grassy plains can support millions of sheep and cattle.

As winter approaches, snow falls on the ground lower down the mountain slopes, and the shepherds are again forced to find shelter for their flocks and herds in the lowlands.

In all these movements their families must go with them, since all the men are needed to look after the flocks, and it would not be safe to leave the women and children in the valleys. Besides, there would be nothing for the women to do, as agriculture is not possible.

This wandering or nomadic life compels them to have a home that can be very quickly taken down and put up again. Therefore they live in tents.

Without using any iron, and only employing willow sticks, obtained from the banks of the rivers, and skins, they make a very comfortable abode.

Their tent is round in shape, so as to withstand the strong wind. It is about fifteen feet in diameter, and can hold forty people during the day, and about twenty at night. The vertical walls, which are about five feet high, are made of a frame of lattice-work. These are made of small pieces of willow bound together by

strips of raw hide that are drawn through holes in the wood.

At the top is a rail, upon which rest a number of spars that support the roof. These spars are tied in their places by home-made ropes of wool.

The whole frame is covered with a mantle made of pieces of felt, which are tied together with camel's hair; but very poor people use birch bark in place of felt. Over this is an outer covering of rush matting, which is again wound round, and made tight with a band of webbing.

The tent is, as a rule, so pitched that the entrance faces south, to be out of the cold north and north-east winds.

In the roof is a large round hole, which can be covered with felt, but is often left open to allow the smoke of the fire to escape.

The whole dwelling is made to fold into pieces of small size, so that it can be easily carried by the camels or oxen, and, with all its contents, it can be packed up and loaded in an hour.

Inside the tent are carpets and rugs for resting upon, and in the centre is the fire, over which hangs an iron pot.

All the utensils are made of wood or leather, so that they cannot be broken. These, together with the weapons and stores, hang from the walls and posts. In the corner of the tent is a

INTERIOR OF STEPPE-DWELLER'S TENT

[*By permission of M. Sommier*]

chest; in this is kept the china tea-cups, which are greatly prized.

As a rule fifteen to twenty tents are pitched together. This forms a village, or awl as it is called.

Sometimes, in winter, when the shepherds settle in the warmer valleys, where, perhaps, they have laid up a store of hay, they erect kraals for their flocks. Here, where often there is ample firewood, they build a house of mud-bricks, plaited willows, or even of stone.

Although these herders may be said to have no fixed abode, it cannot be said that they have no fixed home, for they always return to about the same spot every winter.

CHAPTER XXVI

THE STEPPE-DWELLER—PART II: HIS WORK

SUMMER is the busy time for the shepherds of the steppes. It is then that they do all their work. In winter they form large camps in the valleys where there is a good supply of firewood; and then the men do little but hunt.

The chief work of the men is to look after the animals and to keep them from harm. Without the horse they would find their work very hard indeed, since they would not be able to keep up with their flocks. Sometimes, how-

ever, the watcher of the sheep sits on the back of an ox.

The horse can travel quicker than the camel, and very soon gets used to drinking the water of the steppe, which has a salty taste.

The shepherds greatly prize their horses. They look upon horsemanship as being so important that children are put in the saddle when only four years old. Both men and women ride well.

When the pasture of one place has all been eaten by the animals, two young men are sent from the awl or village to select a fit spot for a new camp. When they have chosen a site for the new camp they clear out the wells.

As soon as this has been done, the women pack up the tent, the head man of the household looking on whilst the other men form the cattle into droves. The camp is soon packed, and, as a rule, starts before dawn. The good woman of the family rides in front.

On the camels are packed carpets, rugs, tea-urns, and tents ; and, on the top of all, they often place their babies in their wooden cradles.

When a tent has only to be moved a short distance, about a dozen men and women go inside, and pick it up by the lattice-work, and place it where it is wanted. They are guided by the shouts of a man who remains outside.

When the camp is fixed, the herds are milked

in the early morning, and are driven to their pasture by mounted shepherds, who bring them back in the evening.

Cows, sheep, and goats are milked morning and evening only, but mares are milked three times a day. The cows, sheep, and goats are milked by the women, and the mares by the men.

Milk forms the chief food of the people of the steppe, and from it they make butter, cheese, and a drink called kumiss.

The lambs and kids are put into folds, or wander near the awl, being looked after by the children, who often make pets of them, and take them into the tents. Besides the milking of the animals, the women have plenty of other work to do.

They have to make felt, rugs, and carpets. The women also collect the fuel. This is no easy matter in a land where there are no trees. They collect all the dung of the animals, mix it with straw, and make it into cakes, which are dried in the sun. These are burnt instead of wood or coal.

It is also the duty of the women to draw the water that is wanted. For this purpose they use large pitchers, in order to save themselves many journeys to the wells. The pitchers are so large that they can only be carried on the head or shoulders, and, to keep from dropping them, the

women must hold themselves upright. This constant exercise has made the women graceful walkers.

CHAPTER XXVII

THE STEPPE-DWELLER—PART III: HIS LIFE

You have read that the chief food of the shepherds is milk. Sometimes, however, they eat meat. All these steppe peoples are able to go without food for a long time, but when they do eat they devour great quantities.

Bread is seldom used; where it is eaten, it is made in the form of small cubes about half an inch across.

You would not like the butter they eat, for they roll the butter made on several different days into a ball. Besides, it quickly becomes rank, and, as it is used as an article of exchange, it often passes through many hands before it comes to the table.

These people dislike cold water so much that they will not drink it until it has been boiled, nor pitch their tents close to it. They are, however, very fond of tea.

They obtain their tea from China. It comes by land on the backs of camels and yaks. So that it can be easily carried, the tea is pressed

into cakes in the shape of a large brick; thus it is called "brick tea."

The shepherds make their tea in a very curious fashion. After boiling it a very long time they add milk, butter, and salt.

The clothes of the shepherds are made from the produce of their flocks, but nowadays those who can afford it have shirts and other garments made of cotton.

The garment worn next to the skin looks like a loose dressing-gown. Over this they wear as many other garments as they require. The garments of the rich are made of silk of gaudy colours, or even of velvet or fur. These are often made to look pretty by having gold and silver worked on them.

The sleeves of these garments extend five or six inches below the hand and thus serve also for gloves.

Their trousers, which are worn both by men and women, are of buff or reddish leather. They are very wide and baggy.

On their shaven head they wear a small cap, and over this in summer a conical felt hat. The hat is slit at the two ends so that the brim can be turned up.

Sometimes the men wear a tall steeple-crowned hat with the brim turned up so as to make two great horns. This is made of felt or velvet, and trimmed with gold.

In summer they wear slippers; in winter, boots. The slippers and boots worn by the women are coloured.

The part of their dress they are most proud of is the girdle. It is often richly covered with silver, and from it hang bags and wallets in which they place their money, powder, knives, and other small articles.

The women dress much like the men, but they often wear on their heads a kind of turban, which is often a foot high. It is made of folds of white cloth wound into a cylinder. One of these folds hangs over the ears and under the chin.

The women plait their hair in small braids, which are adorned with coins and tinkling ornaments; sometimes the keys of the family chest are tied to the ends of these braids. Necklaces and bracelets are also worn. They carry their valuables with them. This is the safest plan, because they are always moving about.

A straight, thin pointed lance is now their chief weapon, the bow and arrow having almost gone out of use.

Old-fashioned guns are also used, and some of the tribes have a whip which has a lash about an inch thick. A blow from one of these whips is enough to kill a man or a beast.

The life led by these people has had a great

effect on them. To look after the flocks and herds needs many persons. The larger the household, the more the flocks and herds of a family can be increased.

For this reason the grown-up sons, when they get married, do not go away from home, but still remain with their parents.

Under such conditions the head of the family is greatly looked up to, and his word is law.

The life led by these people is much the same as it was a thousand years ago. It could not change very much, because they are almost shut off from the rest of the world.

The men have plenty of spare time, which is devoted to sport. Horse-racing is their chief pastime.

The life that they lead has given them keen sight. They can see things long before they are seen by Europeans. Their sense of hearing, too, is very acute, and they never raise their voices, unless the person to whom they are speaking is more than three hundred yards away.

These nomads make good fighting men, for they are always in the saddle, and continually facing the perils of the chase. Long years ago they spread in all directions, conquering wherever they went.

The Chinese built a wall in those days to keep the nomads out of China. This wall

was of no avail; for, under a clever leader, some of these nomads became masters of a great part of China and also of Europe. On this leader's death, however, they were not able to keep the lands they had conquered.

All the people of the steppes closely resemble one another. They all have black straight hair and a yellowish skin.

In the East, the people have slightly slanting eyes with a peculiar fold of the skin in the corners. These are Mongols. In the West, close to the Black Sea, there is a small area also inhabited by Mongols, but these people are called Kalmucks.

The rest of the steppes is inhabited by people called Kirghiz. They are not pure Mongols, but belong to what are known as the Turki peoples.

To-day the Turki are under Russian rule, and are Moslems, while the Mongols are Chinese, and like the Chinese are followers of Buddha.

Though the Kirghiz are Moslems, they are not strict Moslems like the Arabs. Their women do not wear the veil.

CHAPTER XXVIII

THE INDIAN OF THE PRAIRIES

THERE is grassland in North America which is very much like the steppes. This prairie, as it

is called, lies between the great range of mountains called the Rockies, and a mighty river called the Mississippi.

The people who used to live there are known as Red Indians. They are, however, not red, but of a yellowish-brown colour, and were called Indians by mistake.

Columbus, a Genoese, who set out to find a new way to India, discovered a part of America instead. At first, he thought this land that he had found was India, and so the natives got their name, which has clung to them ever since.

The Red Indian was not a herder. He could not be a herder, because there were no horses in his land until Europeans took them there; neither were there any cattle or sheep.

But roaming about the prairies were deer and large cow-like animals with massive heads and shoulders, called bisons. The Indian hunted these on foot, with his bow and arrow.

The bison was most useful to the Indians. Its hide was used to make clothes, tents, and beds; glue was made from its hoofs; its flesh was eaten, sometimes raw, but more often cooked; and drinking vessels were made from its horns.

The huge herds of bison moved north and south over the prairies to get food, and the Indian had to follow them.

Owing to this constant movement from place to place, the Indian had to live in a tent. The

tent was called a wigwam. It was circular in shape, and made of a frame of willow sticks covered with hides. A hole was left in the top to let out the smoke from the small fire that burnt on the ground within the tent.

There was a wing-like curtain by this hole that could be moved so as to keep out the wind. On one side of the tent there was an opening, and over this was a curtain of skin to act as a door. Some of the tents were closed by drawing the two sides of the opening together.

The Indians sometimes painted on the coverings of their tents pictures of hunting scenes in red, green, and blue.

When a movement was about to be made, the tent was taken down by the women, so that the men could give all their mind to the hunting.

These Indians, like the steppe-dwellers, have keen senses, and they are also lean and sinewy. They, too, have straight black hair, which they allow to grow long. It is either allowed to fall to the shoulder, or is braided into plaits. Some Indians, however, pluck out the hairs, leaving only a small patch, which is called the scalp-lock.

On their heads they wear a head-dress of feathers, which is often very beautiful, and sometimes hangs down their backs almost to their feet.

The Indians either paint or tattoo their bodies. Over their shoulders they wear a loose mantle of

INDIAN WIGWAM

buffalo-hide dressed white, on which they sometimes paint curious figures.

Leggings of skin are worn, which reach from the hip to the ankle, and have seams at the sides. Tufts of hair or scalps that are taken in war are sewn in these seams. Their boots, which are called moccasins, are also made of skin.

The Europeans brought to them horses and guns, and, as soon as the Indians obtained these, they quickly became expert horsemen and keen shots. The result was that the great herds of bison were quickly killed off.

Their land has now changed. In the east, where there is enough rain, wheat is grown in large quantities, while in the drier west large herds of cattle and horses are reared.

Many of the Indians were killed in the wars with the white men, and many died of disease.

Those who remain now lead peaceful lives on land which is specially set apart for them.

The absence of domestic animals, which made the Red Indian of North America a hunter, also made the Indian of the Pampas of South America and the black natives of Australia likewise hunters.

CHAPTER XXIX

THE TEMPERATE FORESTS

Most of the trees that grow in England, such as the oak, beech, and elm, are leafless during the winter. The leaves of these trees are broad, so they are often called broad-leafed trees.

In some places, however, trees are seen which have long needle-shaped leaves that remain on the trees all the year round. Since most of these have a fruit which is called a cone, they are known as conifers.

If you go to Scotland you will find many conifers. This is because it is colder in Scotland than in England.

The conifers grow in the colder temperate regions, while the broad-leafed trees grow in the warmer parts. But one of the broad-leafed trees is very hardy, and grows in the cold regions amongst the conifers. It is the birch, which you can easily tell by its silvery bark.

Both kinds of trees are useful to man. They supply him with timber, and the conifers also give resin and turpentine.

In early days, forests were only used for hunting the wild animals that lived in them, and even to-day, where it would be difficult to get the timber to a market, the forest is still merely a hunting ground.

As you have read, the people who dwell in the tundras of Europe and Asia go south into the forests during the winter, and hunt such animals as the sable for their furs.

Except for these people, no one lives in the forests of Siberia, which are so thick that it is very difficult to go through them.

In North America the Indian still continues to trap animals for their furs. He barters the skins for guns, food, and other things.

So long as hunting is carried on in the forest little harm is done to it. A small amount of wood may be collected for fire-making, but that is all.

As man became more civilised he began to cut down the trees to obtain timber for building and furnishing a house. He also cut down trees to make room to grow crops, and to provide charcoal for the smelting of iron.

In most forest lands the houses are built of wood. Sometimes they are quite plain, like the hut erected by settlers in a new land, or are beautifully made, like the pretty Swiss houses, called chalets.

Nowadays great quantities of timber are required, and the chief work carried on in the forests of North America and of Europe is the getting of timber. This is called lumbering.

In Canada, as soon as winter approaches, men go into the forest to cut down the trees.

They live in wooden huts, which are often called shanties.

There are rows of bunks inside the hut, one above the other, in which the men sleep. The

A CANADIAN SAWMILL

[*By permission of the Canadian Government*]

cooking stove is in the middle. This is nothing like your stove at home, but is a large heap of sand. A wooden fire is lighted on this, and when the sand is hot, the food to be cooked is put into a cooking kettle, and some of the sand is raked away. The kettle is put on, and the sand is raked back over the kettle. After a time the food is cooked, and the kettle is taken out of the sand.

The trees that have been previously chosen

are cut down, and dragged on a sledge, over the frozen snow, to the nearest river, which is covered with ice.

It is far easier to drag the logs through the forest in winter over the frozen snow than it is in summer, when the ground is soft, and there are branches lying everywhere.

When the spring comes, the ice on the river breaks up, and the logs are allowed to float down until a waterfall is reached. Here are the sawmills. The logs are taken into the sawmills, and are cut into a number of planks by circular saws. These mills are very busy during the summer, and you can hear the whirring of the saws day and night.

The logs and planks are now made up into huge rafts, which can be broken up into sections to get through the narrow parts of the river. They are then floated down the river to the nearest port.

The small pieces of timber are made into wood-pulp, from which paper is made. Some of our newspapers are printed on paper that is made from wood-pulp in North America.

The people who live in Norway and Sweden, where also there are thick forests, have found that it pays them better to make articles from their timber than to export it as planks. Thus they now make such things as window sashes,

LUMBERING IN THE CANADIAN FOREST

[*By permission of the Canadian Government*]

door frames, table legs, matches, and wooden pegs for bootmakers.

If the cutting down of trees went on, the forests would in time disappear altogether. To prevent this, the forests, in some countries, are very carefully watched, and new trees are planted to take the place of those cut down. This looking after forests is called forestry.

A tree is not fit to cut for timber until it is about eighty years old, so that a person who has forest lands must wait a long time for his profits, and during that time he must pay men to look after the trees. Besides this, the amount of profit obtained from forest land is not as much as would be gained from the land if wheat were grown.

The owner must, therefore, be a rich man. He must also be able to look ahead, and see what is best to be done, and he must be able to arrange for getting his timber to the market and selling it.

The looking after the forests does not occupy all the labourer's time, and as his wages are small, he is forced to do other work to get more money. His wife and children help him in this, for they make wooden toys.

This leads to the making of other things, and several trades connected with wood spring up.

The contact with strangers, brought about by trade, helps to make these people more

thoughtful, and as they live without any worry of good or bad seasons they get on well.

The life led by people who live on forest land that has been cleared varies very much. Some work as miners, others as farmers, while others work in factories.

CHAPTER XXX

AGRICULTURE

In the last chapter you read that almost all the forests of Europe have been cut down to make room for the growing of crops.

No man can tell when planting first commenced, or how it was found out that new plants could be obtained from cuttings and seeds. All we know is that it took place a very long time ago. In fact, man grew crops long before the beginning of history. The Chinese and Egyptians grew corn many thousand years ago.

A great amount of hard work must be done when crops are to be grown. The soil must be dug up, the seeds sown, the harvest gathered, and the grain got from the ear.

In the beginning of this book you read that the women of some of the hunters who live in the tropical forests planted roots in order to avoid the trouble of collecting them.

As the number of people increased there came a time when the animal food was not enough for them all, and so more plants had to be grown. Then man took a greater part in the work, leaving the easier work of weeding, and scaring the birds, to the women and children.

The shepherds of the steppes grow no crops. When, however, they lose their flocks through disease or severe winters, then they take to growing grain, but this is much against their will.

The Russians are now forcing these nomads to stay in one district. This also tends to increase grain-growing, since the nomads are unable to find enough pasture, and must reduce their flocks.

When man takes to planting there is no more need for him to wander about. It is best for him to stay by the fields. A fixed house then becomes his home, and it is built of wood, stone, clay, or whatever material is near at hand, and roofed with thatch.

The chief plants grown are grains. These are also called cereals or corn. They are grasses which by constant looking after have produced better fruits or ears.

Wheat is the most useful of these grains, because from it man gets the flour which makes the best bread.

Wheat will not grow everywhere. In our islands very little of this grain is grown in the west and north. It does not grow in the west because there the weather is too wet, and in the north because it is too cold.

The best wheat land is in the east of England. Here there is little rain, and therefore plenty of sunshine. Besides, the soil of the Eastern Counties is just what the wheat plant likes.

As wheat is a kind of grass, it is only natural that it should grow well on the steppes, provided there is enough rain.

The eastern part of the prairie land in America is excellent wheat land. Let us see how a Canadian farms his wheat lands.

He begins to plough the land as soon as he has got rid of his last crop, and continues ploughing until the frosts of November and December make the earth too hard.

His fields are so large that it would take him a very long time if a hand-plough were used. But the land is level, and so a steam-plough can do this work.

In April the wheat is sown, more ploughing is done, and oats and other crops are then sown.

The farmer now waits for the harvest; but he is not idle: he spends his time looking after the cattle, planting potatoes and other vegetables, or breaking up fresh prairie.

During August the wheat ripens, and for

mile upon mile nothing but golden grain can be seen.

Many workers are wanted for the harvest, and machines called binders cut the corn and bind it into sheaves; it is then stacked.

The threshing of each man's wheat would take a very long time if he did it himself. As a rule, a company of men go from farm to farm with a threshing machine to do the work.

The farms are far apart, and the men travel in a wagon that is pulled by a traction engine. When they arrive at the farm, the engine is used to work the threshing machine.

The machine does its work very quickly; the wheat is put into sacks, and the straw into stacks.

The wheat is sent to the nearest railway station, where it is stored in large buildings, called elevators; and in time it is sent to England.

In those parts of the temperate regions, like the Mediterranean, where the rain only falls in winter, the wheat is grown as a winter crop.

As wheat cannot be grown in the damper districts, other plants must be grown instead. Of these, potatoes, sugar-beet, oats, and rye are the most important.

Bread is made in some countries from rye flour, and, as it is a dark colour, it is often called black bread.

PLOUGHING AND HARVESTING IN THE CANADIAN NORTH-WEST

[By permission of the Canadian Government]

In the warmer temperate countries, maize or Indian corn is grown in great quantities.

Many fruits are grown in the drier parts of the temperate region. In the warm lands round the Mediterranean soft fruits such as olives, oranges, lemons, and grapes are grown. Fruits ripen well here, and, when ripe, can be preserved by drying in the sun; thus currants, raisins, and sultanas are dried grapes.

This growing of crops is called agriculture, and the taking to agriculture forced man to change many of his old habits.

Sometimes the harvest fails. This may be on account of very heavy rains during the ripening time, or of not enough rain in spring to make the plants grow.

Failures would teach the farmer that he must not use all his crop, but must put some by in case it should be wanted later on. So he is led to build barns, and to store up some of his grain, and is made to look ahead.

The farmer requires many machines and tools, and this means that manufactures spring up, and as the farmer cannot produce all he requires he trades with his neighbours.

In time the farmer noticed that the crops he obtained from his lands got less, and he found that this could be altered by manuring the land. He also noticed that if he varied the crop each year he obtained a greater return

for his labour. This is called the rotation of crops.

Where agriculture has been carried on for many years the farmers not only grow wheat and other grains but also keep sheep and cattle, or, in other words, mixed farming is carried on.

CHAPTER XXXI

MINING

When man was a hunter he soon found that he wanted weapons. His first weapon was a stone, which he took up and threw at the animal that he wished to kill. Of course, he could only kill small animals in that way.

He soon discovered that by hitting one stone upon another he could obtain a sharp edge that would cut wood. He also found that, by this means, he could also make stone arrow-heads. Flint, one of the hardest of stones, was used for this purpose.

The age in which man used stone for his tools and weapons is called in history the Stone Age.

In the Stone Age, where flint was found near the surface, a great trade was done in getting the flint from the earth, and selling it to those tribes who had none.

This is the first time at which man became a

miner. In those days his mines were not like the mines of to-day; he did not dig deep down, but kept close to the surface of the earth.

The chalk, in which the flint was found, was dug out by means of picks made of deer-horn. The flint was put into baskets, brought to the surface, and there made into hammers, arrow-heads, and other weapons.

At Brandon, a small village in the east of England, flint is still obtained from quarries that were worked during the Stone Age.

Stone weapons did not last long; they quickly lost their sharp edge, or got broken.

It was a very long time, however, before man found out how to get metals.

How, when, or where this was first done, no one knows for certain, but it is thought that the first metal weapons were made of copper, and that, as a rule, the metal was beaten into the required shape. It was a very long time indeed before man learnt how to cast metal.

Copper is soft, and knives of that metal soon got blunt. Somehow or other man later on discovered that if a little tin were added to the copper it became harder. This mixture of copper and tin is called bronze.

For many hundreds of years weapons and tools were made of bronze. In those days, copper and tin were much needed, and often

great distances were travelled to obtain these metals.

Thus, about four thousand years ago, some people, called Phœnicians, who lived on the coast of the eastern Mediterranean, are believed to have come to our islands to get tin from Cornwall.

Later, iron came into use, and this quickly displaced bronze, as it was harder. To-day we are still in the Age of Iron.

Metals are seldom found pure. They are mixed with earth and other substances, and are called ores.

Iron ore was in early days only obtained from near the surface; no deep mines were dug.

The smelting was done much in the same way as it is done in Africa to-day. You have already read about this method.

No machinery was used, and only a few people were employed in iron-smelting. At first, these blacksmiths were looked upon with awe.

Charcoal was used for iron-smelting. In the sixteenth century a larger furnace came into use. This furnace was made so that a blast of air could be driven through it; hence it was called a blast furnace.

By its use, smelting was much better done, and this led men to dig deeper down to get more ore, and so deep-mining commenced.

The greatest change, however, was made when coal came into use, because smelting could then be more quickly done. Great quantities of coal are mined in England; it is found in seams or layers under the earth.

Two huge holes or shafts are dug down to the seam, and the men, or colliers as they are called, go down in baskets or cages, with their picks and shovels, and dig out the coal.

The coal is then drawn to the shaft, and hauled up. It is very dark underground, and the miner requires a light, but, as the coal is always giving off gases that burn readily, great care must be taken.

If a miner carelessly strikes a match, this sometimes causes a great explosion, and many men are killed. A special kind of lamp is, therefore, provided for the mines.

The lamp that is used is called the Davy safety lamp, after the man who invented it.

CHAPTER XXXII

GOLD-MINING

The discovery of gold in any district has always been followed by great changes.

People generally discover that there is gold in a country by picking it up in the beds of

SLUICING FOR GOLD IN VICTORIA, AUSTRALIA

[*By permission of the Victorian Government*]

rivers, amongst the gravel or mud, where it is quite easy to get at.

In 1848, gold was discovered in a part of America, called California, by a man named Marshall. This man had built a sawmill to supply timber to a farmer named Sutter. The saws were turned by a water-wheel. In the ditch which carried away the water from the wheel a bed of mud and gravel was deposited.

As Marshall stood looking in the mud one day, he saw several glittering particles. He picked these out, looked at them very carefully, and found that when he beat the particles between two stones he could flatten them out. This told him that it was gold.

Gathering a few of these yellow particles of gold, he set off to tell the farmer Sutter. These two men then acted so strangely that they were watched and followed.

Other people thus learnt their secret; the news spread like lightning, and people rushed from all parts of the world in the hope of getting rich.

It is quite easy work to get gold from gravel or sand. All the miner does is to put the gravel or sand into a pan, which he fills with water, and gives to it a few rapid shakes and twists. As the gold is heavy, it quickly finds its way to the bottom. While shaking the pan, the miner holds it in such a way that the sand and gravel

are washed out, but he takes care not to allow the finer and heavier parts to escape.

That which is left is thrown into a barrel containing water and some mercury; the gold unites with the mercury. The mercury is then squeezed through a buckskin bag. That which oozes through is put aside to use again, but that which is left in the bag is put into a vessel and heated. The mercury turns into a gas, and the gold is left behind.

In Western Australia the dry sand is held in one basin, and poured from a height into another. The lighter dust is blown away. This is repeated until almost pure gold is left.

Other ways of getting the gold are often used, but, in no case, is costly machinery required, and the work is so simple that any one can do it.

This supply of gold from the mud and gravel soon became exhausted. But one day something else happened. Two miners were amusing themselves rolling rocks down a hill, when, by accident, one of the rocks brought to view a vein of gold.

Perhaps you are thinking that they could get the gold from the mountains. They could do so, but it is very difficult work; the rock in which the gold is found is called quartz, and it is very hard. It cannot be dug out with pick and shovel, but must be blasted.

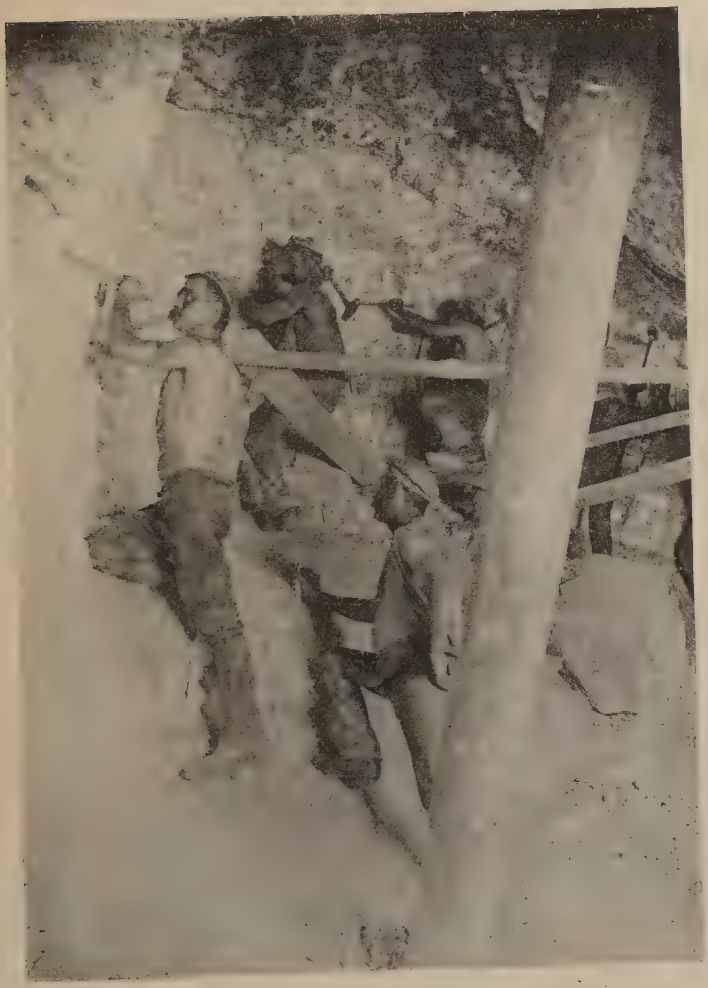
To do this a hole is made in the rock, and some explosive is put in, to which a fuse leads. When the end of the fuse has been lighted, the men retire to a safe distance, and, after a few seconds, there is a terrible explosion, and the rock is broken up into pieces.

Even then the work is not finished; the pieces of quartz must be broken up almost to a powder, and treated in many ways in order to get out the gold.

Thus, when gold is obtained from quartz, a great amount of very costly machinery is required. The mining is, therefore, carried on by a company instead of by each person for himself, as is done in the case of the gold found in the bed of rivers, which is called alluvial gold.

When there was no more alluvial gold to be picked up, many miners in California found their living gone. Fortunately, the country round about was fertile, and the climate good. Some of the miners, therefore, became farmers. Thus you see that the discovery of gold led to the opening up of that country.

People always flock to a place where gold is found. They will even brave the icy north to get gold, as they did when gold was found in Klondike, in the north-west of Canada. Big towns, as, for example, Johannesburg in South Africa, often spring up suddenly on goldfields.



GOLD-MINING AT GREAT DEPTHS.

[*By permission of the Queensland Government*]

Great quantities of gold are obtained from South Africa, Australia, California, and the North-West of North America.

CHAPTER XXXIII

THE SWISS—A MOUNTAIN PEOPLE

Let us now journey to a country called Switzerland, situated in the centre of the continent of Europe. We shall find that it is difficult to travel in this land, for it is very mountainous. These mountains are called Alps.

The scenery there is very grand. You pass along valleys with high mountains on both sides of you. In the valleys it is warm, but as you climbed up the mountains you would find that it got colder and colder.

First of all, you would pass through forests of pine-trees, and above these you would come to grassy fields, which, in the early summer, are gaily covered with sweet-scented flowers. These pastures are also called "alps."

Above these pastures snow lies on the ground all through the year, except on the sharp peaks. The snow collects in the hollows, and, pressed by the snow above, it becomes changed into ice, and slowly moves down the mountain-side. These moving masses of ice are called glaciers.

ALPINE CLIMBERS

Photo: D. McLeish

If you wish to climb a glacier you must have a stick with a sharp spike at the end, so that you can support yourself by digging it into the ice, and an axe with which you can cut steps in the ice for your feet. You ought also to have large nails put into the soles of your boots to help you to walk over the slippery ice.

It would not be safe for you to go alone. You would need a guide. Usually people ascend the mountains in small parties, with more than one guide. All are roped together, so that if any one falls into a crack in the ice the others would be able to pull him out. Sometimes these cracks in the ice are very wide and deep. They are called "crevasses."

When you had climbed the glacier, and had reached the mountain top, you would be rewarded by a splendid view. All around you would be other mountain tops glistening in the bright cold sun.

The glaciers move down the side of the mountains at the rate of a few inches a day into the lower and warmer regions, where they melt, and give rise to mountain torrents.

When spring comes the snow lying on the mountains begins to melt, and large masses of it become loose, and fall into the valleys, causing great damage.

Sometimes a whole village is covered with

the falling snow, and many people and animals are killed. These snow slides are called avalanches.

The Swiss build their houses in the valleys because it is warmer there. Their houses are

VILLAGE OF ZERMATT IN SWITZERLAND

[*By permission of J. A. G. Reeve, Esq.*]

strongly built to withstand the storms that often sweep down from the mountains.

The foundations and lower parts of a Swiss house are of solid stone. The basements are used as stables and store-rooms. The upper part of the house is of wood, and it has a verandah round it. Swiss houses are called chalets.

The Swiss grow crops in the valleys, but their chief work is to rear large numbers of

cattle, sheep, and goats. The animals are kept in the valleys during the winter, and fed upon the hay that has been cut and stored for their use. When spring comes, the animals are taken up into the Alpine pastures This is a joyous

SWISS CHALETS
(Note stones on roof to keep it down)
[*By permission of J. A. G. Reeve, Esq.*]

time both for the men and the beasts. The great cow-bell is taken out and tied on to the finest-looking cow. As soon as the other cows hear this bell they all run together, lowing and frisking with glee.

Much of the milk is made into cheese, and in some of the pastures there are houses for storing the cheese. The milk not used for cheese is condensed and put into tins, or used for making milk-chocolate.

The forests give work to many people. The timber is cut and made into various articles, which are beautifully carved. Many other things are also made by the Swiss, but, as all their goods must pass through other countries

"ALP" OR PASTURE
(Note the bell on the cow)
[*By permission of J. A. G. Reeve, Esq.*]

before they can be sent across the sea, they make small articles into which they put as much work as possible.

This makes the object worth more money, and the cost of carriage is, therefore, more easily borne. Watches, jewellery, and beautifully worked ribbons are some of the things that they make.

In days gone by it was very difficult to get out of Switzerland, or to pass from one valley to another. Tracks or paths led over the mountains where they happened to be lower than elsewhere. These low places are called passes. Many people were overtaken by snowstorms and often were frozen to death on such journeys

On account of this, the people rarely left their own valley, and thus, living always together, great friendship sprang up between people in the same valley.

Since few people came into their land the Swiss knew little about places outside. New ideas did not reach them, and they clung to their old customs.

The fresh air and outdoor life led by the Swiss have made them a healthy and strong people.

A hundred years ago many fine roads were made across the mountains by the great Napoleon. The roads do not go straight. If they did, carts could not go up them, so in the steep places the roads wind about a great deal.

To-day, trains go through the Alps by means of very long tunnels. These take into Switzerland many people, who go there to see the fine scenery, and to breathe the pure mountain air. So many people do this that Switzerland is called the Playground of Europe. The Swiss make much money by keeping these tourists, and by acting as guides to them.

High mountains, even in the hot regions of the earth, are capped with snow. If you were going to climb a high mountain in the tropics, you would find a thick forest at the base. Above this, a forest such as we have in England, then grassland, mosses and lichens, and, last of all, continual snow.

Thus, you see that you pass through the same kinds of country in climbing a high mountain as you do in travelling from the Equator to the Poles.

Because of this, almost all kinds of life can be led in mountainous countries, but the chief occupations are herding and mining.

The people in all mountainous lands are strong, fond of their home, and keep to their old customs. And since they know their own country better than strangers can, it is very difficult to conquer them.

CHAPTER XXXIV

FISHERS

So far you have read how people live in different lands; now let us see what effect the sea has on man.

At first the sea kept man on the land; it was a barrier which he could not cross until he could make a boat.

As soon as this was done, the sea was easier to cross than either mountains or deserts; and many people went to other lands, and many things were taken from one country to another.

The potato, which you have every day for dinner, was brought across the sea from America; so also was maize. In the same way the white people took across to America, amongst other things, horses, cattle, and sheep.

Those people who live on the coast, and see the water every day, are the first to go upon it. Living near the sea, however, does not always make sailors of men.

The negroes of Africa have never been sailors. This is because there are very few harbours on the African coast, and because, in many places, the sea rolls in upon the coast in the form of surf. Besides, there are very few islands that can be seen from the land to tempt the negroes to cross the sea.

On the other hand, the Malays could hardly help being sailors, living where they did. If you look at the globe, you will see a large group of islands lying to the south-east of Asia. This was their first home.

In these islands there are very few wild animals, so the Malays could not live by hunting; they were thus forced to become gardeners or fishermen, or both.

Perhaps man discovered how to make a canoe by accident. Thus, he may have sat on a floating log, and so have gone down the river. In getting out of the way of a crocodile his

OUTRIGGER CANOES *Photo : Beattie Hobart*
[*By permission of the Melanesian Mission*]

log may have toppled over, but, by grasping a passing piece of bamboo, he may have saved himself.

At the same time he would have noticed that by holding the piece of bamboo it steadied his log. The next time he set out he would fasten the bamboo to the log, so as to have his hands free. In time he would notice that if the log

PLANK-BUILT CANOE OF THE SOLOMON ISLES *Photo: Beattie Hobart*
(Note decoration)

[By permission of the Melanesian Mission]

was pointed at the end, it went through the water much more easily.

Then he made a hollow in his log to keep his feet dry, and thus he got the canoe that is so common in this part of the world. This canoe is known as the outrigger canoe, for the piece of wood that is fastened to the canoe is called an outrigger.

Sometimes a second but smaller canoe is used instead of an outrigger.

The hull of the canoe is dug out of a log. In the olden times a stone or shell axe was the only implement that was used to do this work. At the present day, iron axes have, in most places, displaced those of stone.

In one of these islands the canoes are built of planks, and, as the natives have no metal, the planks are fastened together by means of fibres. The seams are then covered with a putty that is made from a nut. These plank-built canoes are very light, and are ornamented with shellwork.

The canoes are forced through the water by means of paddles, or by a three-cornered mat sail.

Some of these vessels are very large, and hold a great number of natives. When, however, the natives go on a trading journey, they lash several canoes together, and cover them with a platform. They store their goods, and even keep pigs on this platform.

Canoe-making is looked upon as a very noble trade, and in many of the islands only certain people do this work. The office of canoe-builder descends from father to son.

At first, the people went on the sea to get more fish, although a good number were caught quite near the shores by means of lines, spears, and traps.

The Pacific Ocean is studded with a large number of small islands, called Polynesia. Some of these islands are high, others are so low that they can scarcely be seen. In fact, they would be passed by but for the coco-nut palms that grow on them.

The people who live on these islands are a fine race; in fact, they look very much like the people of Europe, only they have a brownish skin and black wavy hair.

These people came from India. They were great sailors, and, more than a thousand years ago, some of these islanders went on long voyages to the far south, where they saw icebergs, sea-elephants, and the land of snow.

These early sailors were guided by the stars at night. On long journeys as many as fifteen canoes would go together, each carrying a store of roots and fruits for food on the way.

During the day they went in an open line, and messages were sent from one canoe to another by means of signals, and at night they

closed in. In this way it was not likely that any of the low islands would be passed unnoticed. They settled in most of the islands of the Pacific Ocean.

Some of them reached New Zealand about A.D. 1350. These are called Maoris, and their canoes had figure-heads, which were beautifully carved.

CHAPTER XXXV

THE FISHERFOLK OF NORWAY

In the north-west of Europe there is a country called Norway. It is a long narrow land, shut in between mountains and the sea. The mountains are so high that they have snow on the peaks all the year round, while the lower slopes are covered with thick forests of pine and fir trees. This makes the mountains very difficult to cross, but the forests give plenty of timber for house and boat building.

There is not much flat land in Norway, and the soil is not very rich, so few crops can be grown, and only a few cattle kept.

These flat patches of land lie here and there along the shores of the fiords and in the valleys. The fiords are long narrow openings in the coast, with high cliffs on both sides. Steamers often go up these fiords for many miles.

If you went up one of these openings, you would see the high cliffs on each side, and

wherever there was a piece of flat land there you would see a wooden farmhouse with cattle in the field. Ahead would be the snow-capped mountains, with dark ever-green forests on the

A NORWEGIAN FIORD

[*By permission of A. J. Cole, Esq.*]

lower slopes, and perhaps you would hear the roar of waterfalls.

No place in Norway can be far from the sea, and the sea is never frozen, because the warm S.W. wind blows to Norway and takes warm water with it.

This makes it possible for herrings to live in the sea that washes the Norwegian coast, notwithstanding that it is so far north, and so the fiords are full of fish.

Sometimes clever fishermen drop a huge net across the entrance of a fiord. This closes the fiord, and in this way they can catch very large numbers of herrings.

As a rule, in olden days, the Norwegian used a boat that could be worked by one man, and a line that could also be worked single-handed. This was necessary, because he lived on a farm often far away from other people.

When the children grew up they could not stay with their parents as the children of the shepherds do. The young men married, and had to find a fertile patch for themselves and their wives.

The son knew how to make a small boat just as his father had done before him. In this boat he went up the fiord in search of his future home.

Sometimes the journey was rather long. Then he stopped on the way, pulled his boat on shore, turned it upside down, lit a fire under it, and thus sheltered himself at night.

While choosing his home, he could easily obtain food. There were plenty of fish in the fiord, birds could be caught, and many berries could be gathered.

When at last he found a suitable spot, he set to work to build his wooden house, consisting of a single room to which others were added as they were wanted.

In time, all the fertile spots along the fiord were taken up, and the journey to find a new home became longer. Happily the water, outside the fiords, is also smooth, because the force of the sea is broken by a string of islands situated a few miles off the shore.

But you may ask why did not the men live entirely by fishing?

Well, in those days it was difficult to sell the fish to other countries. Besides, people cannot live on fish alone. As it is, many people in Norway suffer from a terrible disease called leprosy, which is said to be the result of eating too much fish.

Again, fish give nothing from which clothes can be made. So you see the Norwegian was forced to find a fertile patch somewhere, and as time went on he had to make a very long journey indeed for the purpose.

So larger boats were built and sails were used to assist the rowers. In these the Norwegian sailors, or Vikings as they were called, braved the stormy ocean.

Some of these Vikings discovered and settled in Iceland; from here they sailed, later, to Greenland, and in time reached America, nearly four hundred years before Columbus sailed from Europe.

Others sailed south-eastwards, and settled on the shores of our islands. You will hear

more about these Vikings in your history lessons.

To-day, the people of Norway catch large quantities of cod and herring in the seas

VIKING SHIP

round their coasts, and salmon in their rivers. They also make long journeys to the Arctic regions to hunt the whale and seal. Norwegian sailors are found in nearly every port of the world.

Other people work in the forests, cutting down the timber, and others act as miners. Yet there is not enough work for all, so a great number leave their country every year to find new homes in other lands, as they did of old.

Although life in Norway has changed in most parts, the people still live far apart, and the few towns are quite small. The people are so used to depending upon themselves that they are both courageous and self-reliant.

CHAPTER XXXVI

THE DUTCH: A DELTA PEOPLE

ALMOST opposite to the mouth of the Thames, the river Rhine empties its waters into the North Sea.

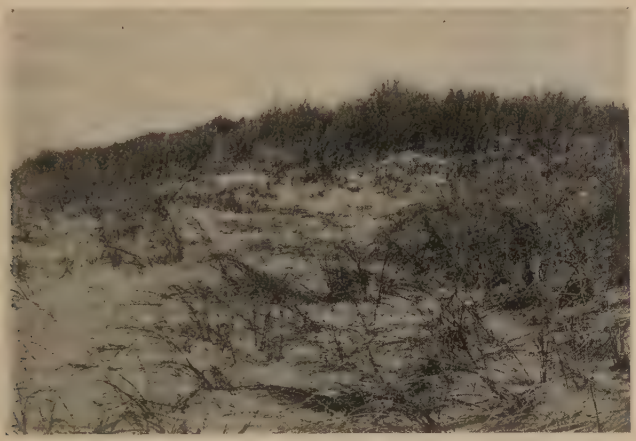
The Rhine brings down so much mud that as it widens and its current slows down, the mud is deposited and silts up the river bed. Thus the river has to divide into many mouths, or outlets, and forms what is called a delta.

The delta of the Rhine includes the greater part of the country called Holland. The people who live in Holland are called Dutch.

Holland is a strange country. The land is very level and very low; in some places it is below the level of the sea.

Perhaps you wonder how the sea is kept out. In places along the coast the wind has blown up hills of sand called dunes. On these dunes grass is planted, and the roots bind the sand together, so that the wind cannot blow it away again. Where there are no sand dunes the

clever Dutch build a strong stone wall called a dyke. The water is kept from the land by these dunes and dykes. Not only must they build dykes along the sea-coast, but along the



SAND DUNES IN HOLLAND, WITH GRASS TO BIND THE SAND TOGETHER

[*By permission of J. A. G. Reeve, Esq.*]

banks of the rivers as well, or the rivers would flood the land.

Now you can guess how carefully the Dutch must watch their dykes, for, if a hole were made in them, the water would flow in, and their land would be flooded. Several times the sea has flooded the land and done great harm in Holland.

Holland was always of small extent, but, by building dykes, the Dutch people have actually

made their country larger than it was; and they are still enlarging it. This is how it is done.

They surround a piece of water by building out dykes, and then pump out the water.

For pumping purposes the Dutch use windmills. Holland is quite flat, so the wind blows regularly, and windmills are, therefore, seen all over the country. Nowadays, however, the more powerful pumps, worked by steam, are frequently used.

As the water is pumped up it is turned into a canal leading into the Rhine. Land thus won from the sea is called a polder.

If you were to go up in a balloon and look down upon Holland, you would see that it was cut up into a number of squares and oblongs, with dykes, and canals running round them. Numerous windmills would be seen on the dykes, along which run the roads.

The air of Holland is always damp, so also is the soil. Thus wheat cannot be grown, but the hardier grain known as rye grows well.

The land, however, is more fit for growing potatoes, sugar-beet, and bulbs. Many parts of Holland look very pretty in the early spring, when for miles the fields are gay with tulips, daffodils, and hyacinths. These plants are, however, grown not so much for ornament as for their bulbs. Dutch bulbs are famous, and find a ready sale in England.

The wet land provides splendid pasture, just what the cows want if they are to give rich milk.

The Dutch keep large numbers of cattle, and take great care of them. The cowhouse is always kept very clean. The walls are tiled,

DUTCH CANAL AND WINDMILL

[*By permission of J. A. G. Reeve, Esq.*]

and the floor is paved with bright glazed bricks, so that both walls and floor can be easily cleaned.

The milk is used for making cheeses. They make their cheeses in the same way as their fathers did, and take no notice of new methods.

The Dutch who live near the sea are fishermen. They sail the North Sea, and catch

great quantities of herrings. Dutch herrings are almost as famous as those of Yarmouth.

Besides, at the delta of the Rhine, there are many small islands, which make the water

DUTCH EEL FISHERMAN

[*By permission of the Great Eastern Railway*]

behind them smooth. Here are reared the famous Dutch oysters.

The fishermen wear very baggy trousers, and wooden shoes called sabots, while the women wear short skirts and sabots.

Sabots are worn all over Holland, and, as these get very muddy, they leave them at the

door when they enter a house, for the Dutch housewife is most particular, and keeps her house spotlessly clean.

In winter it is very cold in Holland, because the bleak east wind blows over it. All the canals and rivers are frozen quite hard. Then the people cast off their wooden shoes, and put on skates, with which they can move very rapidly.

Their long fight with the sea and river has made the Dutch a very determined people.

CHAPTER XXXVII

TRADE

In reading through this book you must have seen that few peoples can get all that they want from their own country. Most peoples rely upon other peoples for things they cannot make or grow themselves. In this way trade arises.

When you want anything, you take some money, go to a shop, and buy it. But if there were no shops and no money, what would you do then?

You might make a present to another person, and, at the same time, let him know that you expected a particular thing in return. This is actually done by some peoples who have no shops and no money.

Others do as boys sometimes do, and give

one thing in exchange for another. This is called bartering.

Bartering is sometimes done in very strange ways. Perhaps you remember how the pygmies of the Congo Forest obtain bananas from the negroes? In many parts of the world, trade is carried on in much the same way.

A few years ago, in a part of Africa, the merchants used to bring their goods, and leave them for a day. When they returned, they found as much gold laid by them as the natives would give. If the merchants were satisfied with the quantity of gold, they left the goods; but if they were not satisfied, they took them away. This is called silent trading, because no words are spoken.

Often people met in the same spot to do their buying and selling, and so a regular market place grew up.

As a rule, the trading village or market is situated in a district between two tribes, and because the men of the tribes are sometimes at war with each other the women see to the markets.

Some of the natives of Africa, all of whom are keen traders, declare the market to be neutral ground, and so every one is safe there.

As trading increases, people become more friendly. Wars do not take place so often, as they interfere with trade.

Then small houses are erected, which are used every market time; and thus, at last, people settle near the market place, and a town springs up.

The changing of goods for other goods grew rather awkward as trade increased, and so things were chosen by which goods could be valued and exchanged. The thing chosen for this purpose was either rare and greatly prized, or valuable in itself.

Slabs of salt are used in countries where that substance is difficult to obtain, and strings of beads or shells in other places. In Africa, a small shell called the cowrie is used. The cowrie shells are strung together, and one day they may be worn as a necklace, and another day used to buy something that is wanted.

In most countries, nowadays, metals are used for valuing and exchanging goods. At first the metal was made into useful articles, such as knives or hoes.

The first bronze money used in China had the form of a knife, with a ring at the end of the handle.

After a long time the blade was made blunt, and later it disappeared, leaving only a ring. This is represented to-day by the round "cash," which has a square hole in the middle of it, so that it can be threaded on a string and easily carried.

In some parts of the world, the metal was cut into pieces and weighed. In those places, a certain weight of metal would buy so much goods.

To save this trouble of weighing, the metal was made into pieces with fixed weights or values stamped on them. These pieces are called coins. The making of coins has gradually been improved, until, to-day, we have the beautiful coins of King George the Fifth.

In order that two countries may trade together, goods must be carried from one to the other. This was done by caravans.

At first the caravans followed mere tracks, but, in course of time, the tracks were made into roads.

The caravans rested at particular places on the roads, and so, at these spots, towns grew up. It was a bad thing for such towns when the traders went by another route. The people left the towns and they decayed. Many flourishing towns of olden times are now in ruins, partly for this reason.

In course of time, the caravans made very long journeys, and men began to look about for an easier means of carrying goods.

It is always much easier and cheaper to carry goods by sea than it is by land, and so, wherever it was possible, sailing ships began

to be used. Thus seaports arose in different countries.

But trade is always growing, and men are therefore always seeking to carry goods more quickly. Gradually, caravans have given place to railways, and sailing vessels to steamships; and now we have the motor-car.

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